Meteorological Functions in Orgone-Charged Vacuum Tubes

Preliminary communication

By Wilhelm Reich

In the *International Journal for Sex-economy and Orgone Research* 3, 1944, pp. 1-16 (later republished in The Cancer Biopathy, 1948, pp. 97-121) I published a few observations on the influence of weather changes on such orgonotic functions as *temperature differences* between orgone accumulator and surrounding air (To — T) and differences in the speed of spontaneous electroscopic discharges. To summarize:

In clear and sunny weather the temperature difference To — T was shown to be higher, up to 1.5°C. in the shade and up to 20°C. in the sun, as compared with the reaction in a cloudy atmosphere. Prolonged rain reduced the difference to zero or nearly zero. The spontaneous electroscopic discharges, too, are slower with clear and faster with rainy weather.

It was also shown that these two reactions ran nearly parallel. They were explained as due to *increase of orgone energy charges in the atmosphere in clear and dry weather, and to withdrawal of orgone energy into cloud formations before and during prolonged rain or thunderstorms.*

Prolonged tests of these basic facts confirmed the first conclusive observations which were made between 1940 and 1944, and were continued over the years by several scientific workers.

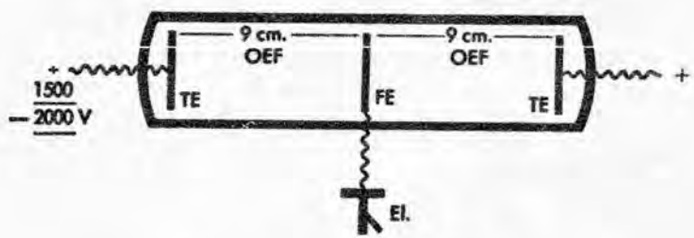
In 1947 I succeeded in charging vacua of 0.5 micron pressure with orgone energy. 1947 was a severe sunspot year and all charged vacua showed blue lumination upon excitation. Geiger counter reactions (up to 25,000 impulses per second in one special vacor tube), and charges which were demonstrable

by means of electroscopes attached to unconnected electrodes (*cf.* communications in *Orgone Energy Bulletin* 1 and 3, 1949).

Since 1947, some functions in the so-called vacor tubes (i.e., orgone-charged vacuum tubes) were encountered which resisted explanation. It seemed, however, that the vanishing of the charges in a few of the vacor tubes had something to do with the decrease in sunspot activity from 1948 onward. There was nothing to be done but wait and continue daily observation of the vacor phenomena. In the course of these observations, since 1948, it was possible to establish the functions connected with weather changes which will be described in the following.

The vacor tubes differed among themselves by varying arrangements of the inner aluminum electrodes. One of these vacor tubes had the following characteristics:

TRIOD VACOR TUBE, 18 x 4 cm.; 0.5 micron pressure



V . . . . Trigger voltage 1500–2000 V
TE. . . . Trigger electrode
FE. . . . Orgone Energy Field Electrode
El. . . . Electroscope indicating field strength
OEF. . . Orgone Energy Field

The vacuum tube consists of a cylinder approximately 18 cm. long and 4 cm. in diameter. It contains *three* aluminum electrodes, one on each end and one in the middle across the width. The two outer aluminum electrodes are used for attachment of the exciting trigger voltage. The one unconnected and placed in the middle is used to measure the strength of the *orgone energy field* between the two outer electrodes.

A distance of 18 cm. between two electrodes would require from 50 to 80 thousand volts to bridge the gap in an 0.5 micron vacuum.

As reported in 1949, orgone-charged vacuum tubes do not operate in the

usual way; no sparks cross the gap between the two electrodes. The electrical tension of approximately 1500 volts which is attached to the outer electrodes serves only as a *"trigger"* for the excitation of the orgone energy field between the terminal electrodes. The calibrated electroscope, which by deflection of the leaf indicates the onset and the degree of the charge of the orgone energy field, is attached to the *middle* electrode. This electrode is located ca. 9 cm. from each of the two outer electrodes.

The procedure in measuring the orgone energy field charge is the following:

1. The voltage is increased slowly in steps of one hundred volts until the deflection of the leaf of the electroscope sets in; it is further increased until the deflection reaches a value of approximately 1500 volts, i.e., until it points to exactly 45° on the scale, i.e., to the fifth division.

Measurements over many months have revealed the fact that the degree of leaf deflection varies not only with the voltage applied to the two trigger electrodes but that it also *varies with the weather:* IT REQUIRES MORE VOLTAGE TO RAISE THE LEAF TO 45° IN BAD, RAINY, OR STORMY WEATHER THAN IN CLEAR, DRY, AND SUNNY WEATHER. The range of the variation of voltage needed to achieve the 45° deflection was rather great, approximately 1500 volts in clear and up to 2000 volts in very bad weather.

The charts which follow (*cf.* pp. 188-9) depict only this variation which depends upon the weather. Since the volt charge varies in reverse proportion to the weather (clear weather—less trigger voltage, bad weather—higher trigger voltage), the numbers 1000 to 2000 run DOWNWARD on the Y axis of the coördinate system in steps of 100 volts. This setting is necessary in order to coördinate the general run of all the weather curves drawn.

2. When the aluminum leaf reaches a 45° deflection, the charging is stopped. The electroscope used in these measurements was a very slow one which discharges one of its ten divisions in about one half to one hour in the open air. The second step in the measurement is the *determination of the rate of spontaneous discharge of the electroscope.* It is interesting to note that the discharge is much faster when the electroscope is attached to the vacor tube. This seems to be due to "leakage" of charge from the center electrode through the orgone-charged vacuum toward the two trigger electrodes which are connected with the voltage supply. Before measuring the rate of discharge we shut off the trigger voltage completely. In this particular experimental

setting I always measured the speed of discharge from the 5th to the 3rd scale division.

Now it was shown that the rate of *discharge also varied with the weather just as it did with measurements in unconnected electroscopes.* The rate of discharge was faster in bad weather and slower in clear, sunny weather. The range of variation was found to be between 30 and 60 second orgs (for definition of "second org," *cf.* THE CANCER BIOPATHY, p. 113).

In the following charts (*cf.* p. 188) the following measurements have been integrated with regard to weather reactions:

1. Barometer 29 to 30 pressure in steps of 0.1.
2. Trigger charge for vacor tube in volts from 1000v. to 2000v.
3. Spontaneous electroscopic discharge in org seconds: 10 to 60 second org.
4. Temperature difference To — T in decimal centigrades 0° to 1°C.

First, let us survey the general characteristics of the integrated orgonotic weather functions:

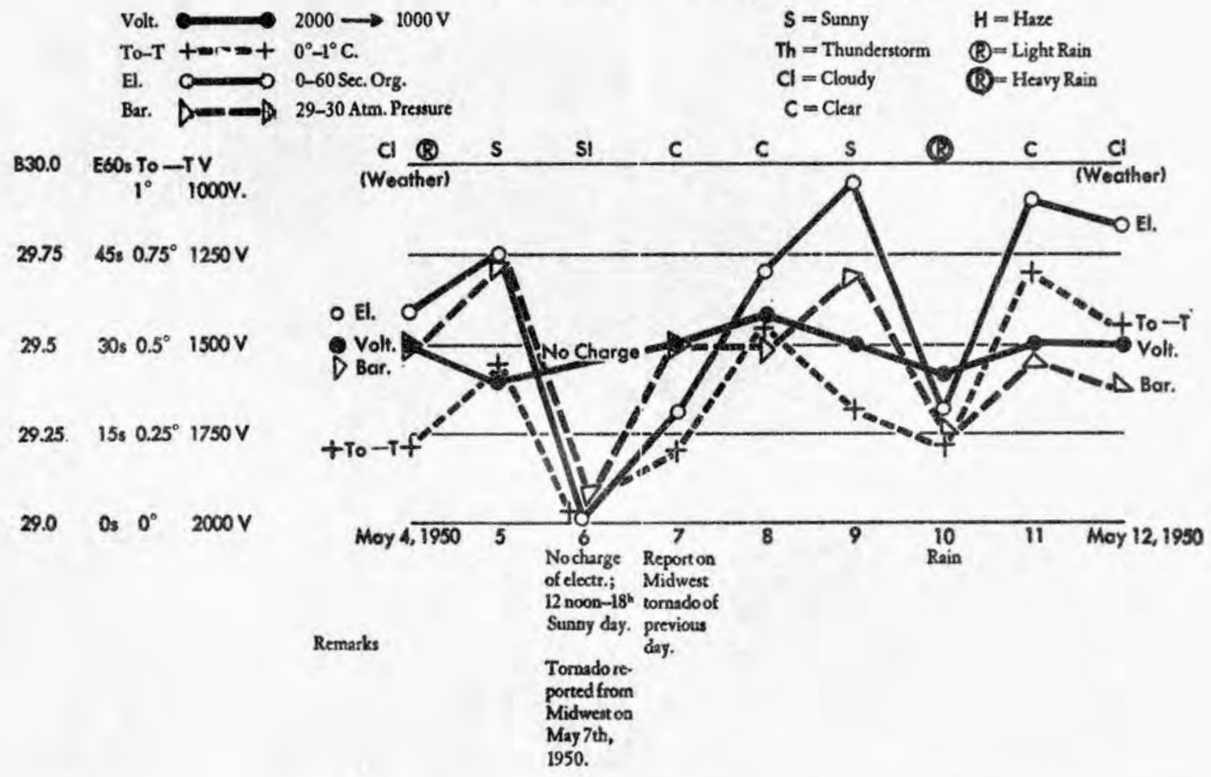
1. The curves of barometer, vacor tube trigger voltage, electroscopic discharge rate, and temperature differences run basically parallel.

2. They all rise high in sunny, clear weather and uniformly drop shortly before and during bad, rainy or stormy weather.

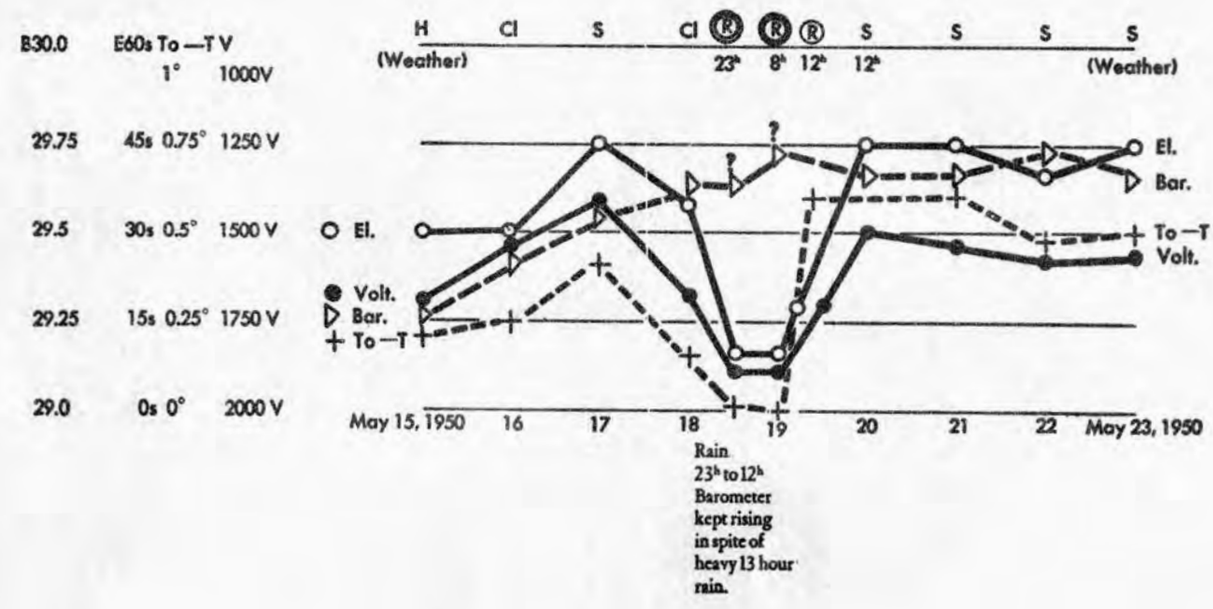
3. The peaks of the rising curves were taken daily at noon. In the morning and evening hours the level of the curves is usually lower in high altitudes. Therefore, measurements were taken between 12 and 13 o'clock over a period of four months.

4. If we compare the four curves, we can easily see that the curve representing the *electroscopic* reaction is by far the most sensitive one. Its range of rise and drop is larger than the range of the others. On May 24, 1950, the great sensitivity of the electroscopic reaction to meteorological changes was demonstrated in a most impressive manner: The day began at Orgonon with beautiful sunshine and clear weather. At noon, when I took the daily measurements, all curves except the electroscopic one had risen in accordance with the clear weather. I did not understand why the electroscopic curve had dropped by several points. I measured again, several times, with the same result. One hour later, at 13^h, I began to understand the drop and at 16.30^h I was certain: At 13^h clouds had begun to appear all over the sky and at 16.30^h a brief but heavy shower poured down. Soon afterward the sky was completely clear and the sun shone again. It was only the electroscopic discharge which by a slight speed-up had predicted this shower.

METEOROLOGICAL REACTIONS OF ORGONE ENERGY IN THE VACUUM, MAY 4—12, 1950



METEOROLOGICAL REACTIONS OF ORGONE ENERGY IN THE VACUUM, MAY 15—23, 1950



5. The barometer lags in sensitivity behind the three other meteorological reactions. On May 18th and 19th, for instance, electroscope, thermometer, and vacor tube trigger voltage showed steep drops, thus indicating the rain which set in at 23^h on the 18th and lasted well into the 19th of May; the barometer, however, kept rising. This is a fact which I cannot explain.

6. Theoretically the most interesting and also the most important function is that shown by the vacor trigger voltage. In terms of meteorological views which make the gaseous atmosphere of the earth (pressure and movement due to thermical differences) alone responsible for the weather phenomena, one would not expect reactions in an evacuated tube. One would, in classical terms, not expect that any reactions to weather changes could take place in a vacuum of 0.0005 mm. pressure. One could not possibly assume that a certain amount of voltage at the two electrodes would ever be different in effect. And last, but not least, one could not fail to comprehend that these changes, induced at the electrodes (18 cm. apart), would manifest themselves in the electroscope which is connected with the center electrode 9 cm. distant from each of the two terminal trigger electrodes. A vacuum is an "empty" or nearly "empty space"; no air movement or air pressure can reach it; neither can changes in humidity or temperature since there is nothing inside to absorb water or hold heat apart from the air-tight condition of the whole system.

Still, fluctuations of the "INSIDE" of the vacuum tube are clearly and irrevocably demonstrated and measurable. The consequences of these unequivocal manifestations of the vacuum are far-reaching. They are the following:

1. There is "something" within the evacuated and tightly sealed tube which is not air and which reacts to meteorological changes in the outer atmosphere.

2. This reaction would not be possible if the "something" *within* the air-tight evacuated tube were not somehow in *direct contact* with the orgone energy in the atmosphere *outside*. The reaction requires that the orgone energy outside and the orgone energy inside the tube are in touch *through the walls* of the pyrex glass tube.

3. Orgone energy penetrates matter which is impenetrable to air and gas.

4. *There is no vacuum. All space is filled by primordial cosmic orgone energy.*

Let us now study the fluctuations within the vacuum tube more closely:

On May 6, 1950, there was no charge in the tube at all. The electroscope did not react. The weather that day was clear and sunny. High-field charge

values were to be expected. *The same day a tornado had hit the Middle West.* I knew nothing of the tornado at the time of measurement. I read about it in the newspaper the following day. This fact means: *A vacuum tube, highly orgone charged, failed to react in Maine, U.S.A., when a major atmospheric turbulence developed some 2000 miles to the West.* This requires, again, a *continuum* in the atmosphere which is most sensitive and cannot possibly be gas, i.e., of a material nature. It is energy, orgone energy. Naturally, it is as yet incomprehensible why this reaction to a tornado 2000 miles away takes the form of a standstill in functioning. But we do not need to try to explain everything at once.

Another reaction of the orgone energy within the vacuum is the lessening of sensitivity to the electrical trigger voltage. On rainy days, it requires more voltage to obtain the reaction that can be had with less voltage on sunny days. This points to either one of two possibilities:

The orgone energy within the vacuum slows down in motility or it is "thinned out," as it were. Both possibilities are equally given. The interpretation of thinning out has the only advantage that it makes understandable the accumulation of orgone energy in the massing clouds.

According to this view, shortly before the onset of heavy rain or thunderstorms, orgone energy is withdrawn from the immediate atmospheric region toward the region of cloud formation. To this we would have to attribute the typical decrease in the temperature difference (i.e., less kinetic energy at the metal plate), the speed-up in the electroscopic discharge (i.e., less energy available to hold the leaf up against gravity) and the reversal of the direction of the orgone energy motion in the atmosphere toward the region of heavy cloud formation.

According to the orgone functions which so far have become comprehensible to us, cloud formation, rain, and lightning would follow the following functions:

1. Increase in energy level (motility and charge) in one area due to sun radiation or other factors.

2. Creation of an *orgonomic* potential difference, i.e., attraction of orgone energy from weaker regions toward the higher charged cloud center.

3. Orgone energy attracts water and vice versa. The highly charged weather center attracts water vapor from the surrounding atmosphere: first cumulus clouds.

4. The cloud, once formed, constitutes a rather strong water—orgone—

energy—system which exerts a strong attraction on orgone energy as well as on water vapor. Highly concentrated and charged clouds, future thunderstorm clouds, are of a deep *blue* color. The blueness is due to orgone energy in direct proportion to the charge. The more orgone energy is concentrated, the more water is attracted and can be kept suspended; the deeper and denser also is the cloud. It can easily be observed that grayish clouds tend to spread over wide areas of the sky, whereas deep blue thunderclouds usually form in an otherwise clear sky. The gray, evenly distributed cloud releases no or little thunder and an even, prolonged rain or drizzle.

These differences point to the following:

5. In the formation of heavy thunderclouds there are *steep* orgonomic potentials in the process of build-up between the thundercloud and other clouds. Once a certain degree of charge has been reached the orgonomic potential[1] changes into the *mechanical* potential of energy discharge: *Lightning*, i.e., locally most concentrated orgone energy.

6. *Rain* would set in when the amount of water carried and suspended in the cloud outweighs the capacity of the orgone charges to keep the water suspended. Usually, in a thunderstorm the onset of heavy rain and lightning are simultaneous though discharges may occur before the onset of rain. During rain the water again separates from the orgone energy. Rain water retains some of its charge. It shows an orgonotic potency of 3 as compared with distilled water, 1, and tapwater, 4.

Much remains to be investigated in this realm. However, the orgonotic functions of the atmosphere relieve us of the queer assumption that an essentially ion-free atmosphere can develop suddenly, out of nothing so to speak, the high charges of a lightning flash. It also frees us from the equally cumbersome assumption that water droplets are results of condensation of vapor around "dust particles." Any microscope will easily reveal the fact that there can be no talk of "dust particles" as centers of condensation. The dust particles would have to come down with the rain and be visible under high magnification. And even the assumption of "dust particles" does not in the least make understandable the *suspension* of millions of gallons of water in the atmosphere.

In December, 1944, in the course of experimentation with bion water in Experiment XX (*cf. International Journal of Sex-economy and Orgone Research* 4, 1945, pp. 133-146), we found out that different bion water solutions showed a nearly parallel rise and drop in orgonotic charge. (The orgonotic potency of the bion water was measured with a fluorophotometer.) The rise in the curve corresponded with clear and the drop with muggy or rainy weather. Since all four preparations of bion water show the same phenomena, only one conclusion is possible:

The orgone energy contained in the bion water reacts to weather changes in the same manner as does the charged vacor tube.

From here a self-evident conclusion follows:

The living organism contains orgonotically highly charged fluids in its membranous system. The organismic reactions to meteorological changes become understandable if we attribute these changes to the reactions of orgone energy in fluids and in vacua to weather changes. *The living organism, too, is more active in sunny, clear weather and slows down energetically in muggy or rainy weather.* It is well known that rheumatic patients as well as cancer patients react severely to weather changes.

[1] *Cf.* Reich: "Cosmic Orgone Energy and Ether," *Orgone Energy Bulletin* 4, 1949, pp. 146-147.

Sit down before fact as a little child, be prepared to give up every preconceived notion, follow humbly wherever and to whatever abysses Nature leads, or you shall learn nothing. I have only begun to learn content and peace of mind since I have resolved at all risks to do this.

—T. H. Huxley

Projeto Arte Org
Redescobrindo e reinterpretando W. Reich

Caro Leitor
Infelizmente, no que se refere a orgonomia, seguir os passos de Wilhelm Reich e de sua equipe de investigadores é uma questão bastante difícil, polêmica e contraditória, cheia de diferentes interpretações que mais confundem do que ajudam.
Por isto, nós decidimos trabalhar com o material bibliográfico presente nos microfilmes (Wilhelm Reich Collected Works Microfilms) em forma de PDF, disponibilizados por Eva Reich que já se encontra circulado pela internet, e que abarca o desenvolvimento da orgonomia de 1941 a 1957.

Dividimos este "material" de acordo com as revistas publicadas pelo instituto de orgonomia do qual o Reich era o diretor.
01- International Journal of Sex Economy and Orgone Research (1942-1945).
02- Orgone Energy Bulletin (1949-1953)
03- CORE Cosmic Orgone Engineering (1954-1956)

E logo dividimos estas revistas de acordo com seus artigos, apresentando-os de forma separada (em PDF), o que facilita a organizá-los por assunto ou temas.
Assim, cada qual pode seguir o rumo de suas leituras de acordo com os temas de seu interesse.
Todo o material estará disponível em inglês na nuvem e poderá ser acessado a partir de nossas páginas Web.

Sendo que nosso intuito aqui é simplesmente divulgar a orgonomia, e as questões que a ela se refere, de acordo com o próprio Reich e seus colaboradores diretos relativos e restritos ao tempo e momento do próprio Reich.
Quanto ao caminho e as postulações de cada um destes colaboradores depois da morte de Reich, já é uma questão que extrapola nossas possibilidades e nossos interesses. Sendo que aqui somente podemos ser responsáveis por nós mesmos e com muitas restrições.

Alguns destes artigos, de acordo com nossas possiblidades e interesse, já estamos traduzindo.
Não somos tradutores especializados e, portanto, pedimos a sua compreensão para possíveis erros que venham a encontrar.

Em nome da comunidade Arte Org.

Textos da área da Orgonomia Física.
Texts from the area of Physical Orgonomy.

International Journal of Sex Economy and Orgone Research

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03 Maria Courie. Plant Respose to Orgone Energy 1955
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