The "Secret" of the Rife Machine

Many researchers have tried for many years to find "Rife's Secret". What secret? Well we have it on fairly good authority that Rife succeeded in curing 16 out of 16 cancer patients at the Scripps Clinic in 1934 and that Johnson and Hoyland, together with people like Yale, Hamer and Couche also achieved similar successes in other clinics. Yet despite this, we don't hear of such spectacular successes today (with a few rare exceptions), and in fact Rife himself had nothing like the same success after 1940 either. So the "secret" is what he did (differently) in the 1930's that caused such spectacular cures.

In an earlier paper I described one line of reasoning that led me to believe that Rife himself didn't actually know "the secret" and that possibly Phillip Hoyland did. Some people have objected to that idea but as I explained in that paper it was simply a speculation and I never claimed it was "the truth". That does not imply however that it is devoid of truth.

Regardless of whether or not those speculations are true I still believe that Rife himself did not know precisely what his machine was doing or how or why. I believe that Phillip Hoyland didn't know exactly either but I am convinced he had a better idea of it than Rife. We know that one of the basic disagreements between Rife and Hoyland regarding the machine was the use of harmonics. Rife believed that pure frequencies were responsible for the "Rife effect", yet Phillip Hoyland built successful machines (that cured real patients) that generated large amounts of harmonics. Rife's own attempts to build "pure" machines according to his own principles from the 1940's onwards were generally not very successful for treating real patients - or inconsistent to say the least. Yet at the same time Rife had his microscope and could verify the effectiveness of the machines against pathogens. So he had good reason to believe his "pure" principle was effective.

It's quite easy to see how an argument could arise over this. You can't really deny that a machine kills pathogens if you actually see them being killed under a microscope. Yet at the same time you can't really deny that if that pathogen is solely responsible for a given disease that a machine which kills it selectively should also completely cure a patient with that disease. If it doesn't, the machine must be wrong. I believe that Rife partially argued around this apparent paradox by invoking the pleomorphic principle. He may have been right in part, but it is not the only possible or credible answer.

By taking into account various different factors and by reviewing a lot of research I have managed to derive a series of possible explanations that are logically consistent with the observed facts and which also may give an explanation of what the "secret" was, how it worked, and why it apparently hasn't been rediscovered since. That's what this paper is about. I propose to explain logically how there is no paradox at all between the views above and that the problem lies in limited (and unrealistic) interpretations of the data. Now I want everyone to understand this fully, so I'm going to take my time and write a long but comprehensive account covering every detail so there is no misunderstanding. I think I need to because I believe that the reason why Rife research has been so limited in its successes to date is because we've become locked into a false set of ideas that we need to let go of to understand what's really happening. So please bear with me, I think the full appreciation of the result is worth a slightly longer (literary) journey! :-)

Before explaining I would like to say that if you disagree with what I think - fine. But I'm not forcing anyone to read it, so if you don't like it, don't read it. It is speculative in part, factual in others but I am not claiming it is the whole "truth". I make no pretence that it is entirely scientific, rather that it's an explanation of a line of logical reasoning that I hope most people will be able to follow. I make no apologies for thinking outside "official channels" or trying to share what I believe may be useful information with the Rife community at large. I'm trying to find a cure for nasty diseases, not make a profit from books etc.

The Rife Effect and the Curative Effect.

To start with I've made an artificial distinction between what I call the "Rife Effect" and a variation which I call the "Curative Effect".

For the purposes of this paper I define the Rife Effect to be an effect whereby a specific pathogen may be destroyed or "devitalised" by application of a specific electrical frequency (particularly on a microscope slide). I define the "Curative Effect" to be an effect whereby a disease in a real patient is cured or alleviated by application of one or more electrical SIGNALS (i.e not necessarily frequencies).

Why make such a distinction? Because I believe that failure to make this distinction is the source of the paradox mentioned earlier. There is no paradox, there are in fact two separate effects which are not necessarily mutually exclusive.

I have a good reason for making the distinction and slowly building up to a point I want to make so please bear with me for the moment even if it appears I'm stating the obvious.

The Original Machines.

Let's start by looking at various machines developed by Rife or his associates during his lifetime and try to fit them into the above categories - i.e. did they exhibit either or both of the above effects?

1. The original "Rife Ray". It's difficult to say exactly how many machines were developed in the period from 1920 to 1934, so I've lumped them all together and called them the "original Rife Ray". We know that these machines were used on pathogens under a microscope and that some or all of them demonstrably killed the pathogens, so these machines exhibited the Rife Effect. We also know that some of these machines were used to treat artificially induced tumours in mice (successfully) and so we can say that, in general, the machines also demonstrated the Curative Effect as well.

2. The Scripps Ranch Machine. It's possible that the machine used for the Scripps Ranch trials was one of the original machines above. It's also possible that it was a more portable redevelopment made specially for the trial. There are arguments in favour of both propositions which are irrelevant to this discussion. This machine certainly demonstrated the Curative Effect and may also have shown the Rife Effect, but I don't recall any explicit proof of the latter.

3. The Hoyland Machines. A range of machines developed by Phillip Hoyland between 1934 and 1939. Many of these machines certainly demonstrated both the Rife Effect and the

Curative Effect. It's difficult to say exactly which did which but for example the Rife Ray No 4 which was one of the earliest of these machines certainly demonstrated both effects. The very last of these machines may or may not have demonstrated the Rife Effect. In a letter to Gonin, Rife says that one of these machines "failed to do the work" i.e. failed to demonstrate the Rife Effect. Despite that, in the absence of any other evidence to the contrary, these same machines were later used in an English laboratory in the 1940's to great effect.

4. The Thompson Machines. These were developed for Rife by Verne Thompson from the mid-1940's onwards. Some of the early machines did not demonstrate the Rife Effect. I don't know if it can be absolutely confirmed that any of these machines showed the Curative Effect either. But it's probable that some did.

5. The Crane Machines. These were developed under the auspices of Life Labs Inc and Allied Industries, John Crane's companies in the 1950's onwards. Some of these machines were undoubtedly Verne Thompson machines. Others were claimed to have been developed by Crane himself but this is unlikely, they were probably designed by engineers working for Crane. Some of these machines demonstrated the curative effect, but nowhere near as definitively as the early machines of the 1930's - I don't recall if any tests were done to demonstrate the Rife Effect, but I think it's reasonable to assume that they did.

O.K. that's it. So why did I bother to explain all this? Because I think from the above it should be fairly obvious that the two effects are not always seen together and also that they are not mutually exclusive. What is important is how each is measured. The Rife Effect during Rife's time was measured by one straightforward, simple method - the microscope. If the machine blew up pathogens on a slide it demonstrated the Rife Effect. The Curative Effect was more subjective in that it was observed when patients were cured of a particular disease by exposure to the machine. The question that arises from all of the accounts of the early machines is this: could a machine which did not exhibit the Rife Effect, exhibit the Curative Effect? And vice-versa as well. I believe the answer to both these questions is yes.

How is this important? I believe it was critically important to Rife himself. Rife was clearly convinced of the one pathogen, one frequency idea. If you knew the MOR of an organism you could devitalise it under a microscope and equally in a real patient and that's all there was to it. But this very conviction is probably what sparked the technical disagreement with Hoyland and also what contributed to Rife's later lack of success in reproducing his early results, because I think that Rife believed that if the Rife Effect was absent, the curative effect had to be too.

Now there is a piece of real irony in all of this - I believe that Rife was basically right in his original idea about one pathogen, one frequency, but that his own criterion for measuring his success - the microscope - was what led him astray. I also believe that Hoyland was right about the harmonics - but not because the harmonics just happened to hit an MOR (which is commonly assumed) but for a completely different reason which I will explain in a while. In a nutshell I believe Rife made a fundamental error - he limited his own thinking and got locked into an idea he couldn't escape from. I believe Hoyland was more open-minded and pragmatic about it, although I don't believe that Hoyland understood the ***full*** reasons why one machine worked better than another any more than Rife did. So the question that has never been raised to my knowledge is: what if they BOTH were right - for a reason beyond either of their comprehension?

Let's now look at what this new factor might be.

The Speed of Light and the Wavelength

This bit is more technical but I want to explain for laypeople as well as engineers, so don't switch off if you're non-technical, it's not that difficult to understand.

Electromagnetic waves propagate at the speed of light. So if you shine a beam of light, the light moves forward at the speed of light which is 299,792,458 metres per second. Fair enough, pure and simple. But is this always true? The simple answer is no! The speed of light is a constant in ***any given material***. By that I mean that the speed of light as quoted above is always true in an absolute vacuum. It's not the same in air for example. Light travels slower in air than in a vacuum - but the difference is so tiny it's negligible. But if we shine light into a denser medium like water the speed is much lower - approx 2/3 of the speed in vacuum. And the same is true of glass and anything else you shine light through. Light travels at different speeds in different media (i.e. different substances). The ratio of the speed of light in vacuum to the speed of light in any substance is the refractive index of that substance.

Now light is just one form of electromagnetic radiation. All forms of EM radiation exhibit the same slow down effect as above. EM radiation includes radio waves, light, x-rays and gamma rays. Even sound waves exhibit the same effect but in different degree.

So the "speed of light" per se isn't really a constant.

EM radiation consists of waves according to classical EM theory. Each wave has a frequency and a wavelength. Many people think these are the same thing - they're not. The frequency is a measure of how many waves occur in one second. The wavelength is a measure of how long each wave is (in metres).

When you think about it carefully, the frequency, the wavelength and the speed of light are intimately related. In fact there's an equation to describe it:

speed = frequency * wavelength

So if the speed of light changes when radiation enters a substance other than vacuum, then it follows that either the frequency or wavelength or both must change too, otherwise the equation will be wrong.

Now for reasons I won't go into here, (basically conservation of energy) it's actually the wavelength that changes. The frequency stays constant. So if the speed of the EM radiation gets slower in any substance, then the wavelength gets correspondingly shorter by the same ratio.

So what's the relevance of all this? Well, the body is a substance - so if we pass EM radiation into it, it must slow down as it enters the tissues of the body. So the wavelength of the same radiation outside the body is different to the wavelength inside the body.

Rife postulated that he was killing bacteria etc., by finding a frequency that directly by resonant induction caused them (or part of them) to vibrate and then rupture. In fact, such resonance phenomena rely on the transfer of energy from wave to substance and are subject to the effect above. Energy is transferred to a material by resonance when the wavelengths match, i.e. the radiation has the same wavelength as the size of the piece of material you are resonating. This can also be true of harmonics - the material doesn't always have to be exactly the same size as the wave, if it is shorter by a harmonically compatible amount.

The significance of this becomes clearer when we realise that Rife's resonance effect (if it exists) ***must*** be dependent on wavelength. But we also know from the above that the wavelength of any given frequency of radiation inside the body tissues ***must*** be different to the wavelength of the same radiation ***outside*** the body. And if this is true, then there is no way that any one frequency can resonate the same object equally both inside and outside the body tissues.

Let's be more specific. On the face of it, it would appear that a frequency which is an MOR for a pathogen on a microscope slide cannot possibly (except by pure coincidence through harmonic matching) be an MOR for the same pathogen inside body tissues!

Did Rife know this? Maybe - it's an important principle in optics and Rife understood refractive indexes but was he able to apply that information to radio phenomena? Did Hoyland know it - he must have, because he was a radio engineer and radio engineers have to know these things to design radios!

But here an interesting question arises: did either or both of them understand this same principle in the same way - I believe they did not because of their different backgrounds. I'll explain more on that in a little while, it's important to understanding a potential source of dispute between them.

I want to diverge to go into a bit more detail about two extra aspects of this same phenomenon - aspects which I believe that Hoyland had to know as a radio engineer but which are not usually known to optical engineers - like Rife. I will also later clarify the statement above about MOR's being different inside and outside the body - there is a lot more to this than meets the eye!

Permittivity.

We need a bit more physics I'm afraid!

Above I explained about how the wavelength of a wave changes with its speed. Now I want to explain exactly WHY the speed changes because it is vitally important to understanding the whole process.

If you pass a DC electric current through a substance, the substance resists the flow of current to some extent and this measurement becomes known as the resistance of the substance. If you pass an AC (wavy) electric current through a substance it also experiences resistance in the same amount as DC - but in addition it experiences further resistance which is called reactance.

All substances have two electrical properties which are called permittivity and permeability respectively, these properties contribute to reactance. The permittivity of a substance is a measure of how effectively a substance passes electric fields. The permeability of a substance is a measure of how effectively a substance passes magnetic fields.

Now an electromagnetic wave is composed of two parts, an electric field and a magnetic field, interlocked together. So if a substance has a permittivity and permeability (all substances do) then it will effectively resist the flow of the fields, just as resistance resists the flow of electric current. It's because of this "resistance" due to permittivity and permeability that EM waves slow down in different substances.

Earlier we defined the speed of a wave in terms of its wavelength and frequency, now we can also define it in terms of permittivity and permeability as well. The equation is:

speed = 1 / SQRT(permittivity * permeability)

O.K. so now we know what's happening, how is this relevant? Well although speed depends on permittivity and permeability, in the real world, most substances have almost the same permeability. As a result the "slow down" in real substances is almost exclusively due to the permittivity of the substance.

So now we know that changes in speed AND wavelength in different substances depend almost entirely upon permittivity.

But this is not the end of the story. I mentioned above that refractive index was the ratio of the speed in vacuum to the speed in the substance - this depends on permittivity as well. And as most people know, the refractive index is what determines what angle light is bent through when it enters a substance - it's the same for EM waves, they also get bent and refracted when they enter different substances.

Now we know that if we are sending an electrical wave into the body it must undergo at least 3 changes - it must be slowed down, it will be bent (refracted) and it will change in wavelength. Is that it? Not quite.....!

There is one further change as well. In my recent paper describing the possible EM field effects from a plasma tube I mentioned another important property - impedance.

Above, I described how all substances have resistance to DC electric current. They also have reactance which is (largely) due to permittivity. If we need to know how a substance will truly resist the flow of an electrical wave we need to take all these things into account simultaneously. So we basically add them all together (vectorially) and end up with a kind of master measure of real "resistance" - we call that impedance. So impedance is simplistically speaking, the sum of resistance and reactance.

What I didn't describe above is that reactance not only resists the flow of AC current, it also can shift the phase of an AC signal as well. And so impedance not only measures how much "resistance" there is, it measures how much phase shift there is as well.

Electronics engineers know that if you want to transfer energy from one system to another, you have ideally make sure that you match their impedances - if you don't then some energy will "bounce" i.e. be reflected. In my earlier paper on vector fields I explained that the impedance of an electric and magnetic vector field depends on the ratio of the electric (E) field to the magnetic (H) field.

Now, the impedance of a substance also depends on the permittivity of the substance - so now we actually have 5 separate effects when an electric or EM wave hits real body tissue - there is a change in speed, wavelength, refractive index, reactance and phase (together as impedance).

So the permittivity of a substance is absolutely critical. If we feed waves from one substance of one permittivity (say air) into another substance with another permittivity (say body tissue) then there will be 5 major changes in the properties of the radiation that will affect what happens to it at that stage.

O.K. this seems to be getting complicated! Let's go back to Rife and Hoyland. Rife was primarily an optical engineer. Did he know the speed and wavelength of the radiation would change inside the body? Like I said before he probably did. Did he know about the change in refractive index - of course he did. Did he know about the change in impedance? Well I believe he ***didn't*** - because impedance is not considered in optical work. Did Hoyland know about all the above things - yes he must have, because radio engineers need to know all these things, ***particularly*** about impedance.

Is this feasible - I recently asked an optical engineer if he knew these things one by one. He answered quite dismissively "of course" when I mentioned speed, wavelength and refraction. He looked completely blank and confused when I mentioned impedance, although when I explained he said "of course - you mean reflection...". This is true, reflection is a factor, but not the only factor - impedance is much more complex than that.

Let's go back to the MOR's.

<u>Mortal Oscillatory Rates.</u>

I've now proposed something that appears to throw a big question mark on the subject of MOR's. MOR's must depend on the wavelength of the incident radiation if they are a traditional resonance phenomenon. And we now know that the wavelength of the radiation emitted from something like a plasma tube is different on say a microscope slide to what it would be inside real body tissue.

If that is true, and all there is to it, then it follows that any MOR determined by exposing a pathogen under a microscope cannot possibly be the MOR for the same pathogen once it gets inside a real patient. So we have an apparent paradox - because we know that the MOR's determined under a microscope apparently did affect the same pathogens in real patients.

The only way we can break this paradox is to take a big conceptual leap - and assume that ***MOR's are not, and cannot be, a pure electrically induced resonance phenomenon***.

But it takes quite a bit of "lateral thinking" to make such a leap. I believe that neither Rife nor Hoyland ever did - and this was one of the reasons why Rife in particular got stuck trying to reproduce the effect.

It's quite hard to abandon the idea of the MOR as resonance. It's the first thing anyone learns about Rife therapy and appears to account for the effect. Once you're hooked on it, it's hard to let go. But as I hope to show, this doesn't leave us in the dark - it actually gives a clue how to proceed.

Because it's so easy to get hooked on this concept it's natural to see if it's possible to explain the apparent paradox above by working round it.

One possible explanation is that the body is mostly water and has an average permittivity similar to that of water. I used that very same idea as a simplistic explanation in my paper on vector fields and plasma effects. If you assume that a pathogen exposed to an MOR on a microscope slide is suspended in water and that in the body it's in a similar environment then it's likely that there is no change in MOR wavelength between the slide and the body tissue - the MOR is the same and there is no apparent paradox.

BUT.....it's not that simple!

Why not? The simple answer is because there is no such thing as an average permittivity in the body. Each tissue of the body has a different permittivity. And as if that is not enough, it's actually even more complicated! The permittivity of both water and body tissues changes widely with frequency as well! Is that it? Not quite, not only does the permittivity change, it's actually complex as well - by complex I mean it's a complex number not a simple real number.

So now we have a real problem. The real permittivity of real body tissues is horrendously complicated. So complicated in fact, it requires some real heavy duty mathematics to make any sense of it at all.

Real Body Tissues

So where can we start to make sense of all this. Fortunately there is an answer. A few years ago a researcher called Dr Camelia Gabriel did the most comprehensive study ever of real body tissues and real permittivities at all frequencies. Gabriel is from the University of London and published her results in a study for the US air force. Not only did she derive the properties of many different real body tissues but she also worked out a mathematical model to predict them.

You can find the data and the model on the following web link:

http://www.brooks.af.mil/AFRL/HED/hedr/reports/dielectric/

The model is extremely complicated and hard to work out but it can be done and it gives good values for many tissues at most frequencies from approx 100Hz right up to 100Ghz.

I won't try to give all the details for real tissue parameters here. I've done extensive calculations with the model and concluded that there is no possible relationship between any

MOR derived on a microscope slide and any MOR experienced in the body - if MOR's are some sort of electrical resonance.

The conclusion therefore is obvious - the MOR is NOT a direct electrical resonance phenomenon of a cell itself - at least not in the way that it has been traditionally represented. On the basis of the Gabriel data I cannot find any indication that there is any direct electrical induction resonance between cell proteins or DNA etc.

Now before anyone jumps to conclusions, I am not saying there is no such thing as an MOR, obviously there is - but it's obvious to me as an engineer that an MOR cannot possibly be generated by applying a ***single*** frequency to anything - except possibly a sample on a microscope slide which exists in a much simpler electrical environment than a real body.

Harmonics

Looking at the Gabriel data I was able to extrapolate some simple ratios. One of them relates to frequency. The ratio of different wavelengths encountered in different tissues varies with frequency. At audio frequencies (around 500Hz) the ratio of the differences in experienced wavelengths in different real tissues varies by a factor of approx 80:1 - in other words some tissues will experience wavelengths 80 times longer than other tissues for the same frequency.

As you increase the frequency, the ratios become lower - so around 1.6 MHz the extremes of the ratios are reduced to approx 15:1.

The next thing I looked at was whether there was any simple harmonic relationship between the wavelengths in different tissues at many different frequencies - the answer is that there is no such relationship. The "spread" of real wavelengths appears almost random.

So what is the answer. There are two possibilities. Either you can increase the frequency right up into the high gigahertz range (microwave frequencies) and reduce the ratios near to 1:1 so that there will be a single frequency that will have the same effect on pathogens in all tissues. This is however impractical for two reasons. One is that at this kind of frequency range you get heating effects which will damage normal body cells. The second is that skin effect (an electrical phenomenon) takes hold and most of the applied power will end up confined to the surface of the skin and never enter the body.

The second possibility is to try a "scatter gun" effect and throw as many simultaneous frequencies at the body as you can in the hope that one or more of them will score on real MOR's in real tissues. The best way to do this to generate as many complex harmonics as possible.

Back to Rife and Hoyland. We know that one of the principal arguments between Rife and Hoyland was the use of harmonics. Hoyland made machines with a high harmonic spectrum - Rife believed that pure single frequencies were needed. Without beating around the bush, Hoyland's machines worked better at curing real people than Rife's later "harmonically challenged" machines. I suspect that Hoyland figured that a wide harmonic spread was essential to get good matching of wavelengths across a wide range of permittivities.

So, is this the answer? In a word, no. Unfortunately. But it's a clue and one key to the total puzzle.

Rife was absolutely right in his letter to Gonin about Hoyland's machines - that there was no way of controlling the harmonics of a given frequency. There is no way to predict or guarantee that a mess of complex harmonics will actually hit an MOR. And again, we know that an MOR applied to a sample on a microscope slide also killed the same pathogen in the body.

We have another paradox - apparently - but in reality not. What we can say about the subject of harmonics is this:

If we want to induce an electrical potential into a pathogen which is distributed throughout body tissues with a wide range of electrical permittivities we need to apply a complex mess of harmonics to do it.

But will this kill the pathogen? On its own, no. We need something else. But obviously this harmonic mess has to be one part of the total equation to unifying the Rife Effect and the Curative Effect.

What could the other factors be?

Impedance

You will recall that above we mentioned that impedance depends on permittivity as well. This is at the "body end" of things. At the other end we have a plasma tube. To induce maximum power transfer from tube to body we need to match impedances between the two.

How can we do this? Well it occurred to me that when I was explaining the vector field effects in plasma tubes I mentioned that the output impedance of the field from the tube is equal to the E/H ratio (electric to magnetic field ratio) of the tube.

In order to ensure that we can induce some electrical signal of matching wavelength into different body tissues I proposed using harmonics. We now have the same problem with impedance - so the obvious answer is that we need something analogous to harmonics in impedance terms. I can't think off the top of my head how to create "impedance harmonics", but there is one possible easier solution.

If we want to create a wide range of different frequencies we can do it two ways. We can either generate a complex harmonic pattern by using a complex wave, or we can simply sweep the frequency up and down so that it passes through each of the target frequencies many times per second.

So is there an analogous way of "sweeping" the impedances? The simple answer is yes, and it's actually quite easy. All we have to do is ramp the voltage across the plasma tube.

The E field of the plasma tube is proportional to the voltage across it. The H (magnetic) field of the tube is proportional to the current through it. Now the voltage/current characteristics of a plasma are very complex and non-linear. So if we just change the voltage steadily up

from 0 to our target voltage in a linear ramp, we will in effect be "sweeping the impedances" through a wide range. If we then also "jiggle" the phase of the ramp as well, the match will be even better still.

So in the absence of any other information we now have a way of generating the highly varied impedance matches needed.

Harmonics, Impedance and MOR's.

So we now have two parts of the potential solution. If we want to induce a potential difference across real pathogens in real body tissues we need to generate a signal in which the voltage is ramped up whilst generating a high harmonic content. But where is the MOR?

Well we know that the MOR does NOT depend on the major electrical characteristics of the target environment - if it did we wouldn't be able to equally kill pathogens on a microscope slide and the body.

It then occurred to me that the answer is actually quite simple. Our signal above will generate a potential difference across most cells regardless of the environment they're in. So if we now want to "apply" a frequency to them, how about just switching the potential on and off?

And in this way, we arrive at the third and final component of the mystery. All we need to do now is gate the above complex signal on and off at the MOR frequency. If we do that we will guarantee that we are applying a pulsed voltage at the MOR to the membrane of the target cell.

Unified Rife Theory

In this way I arrive at my "Unified Rife Theory"! :-)

A lot of speculation has gone into what I have written in this paper - but also a lot of hard science and pure logic as well. In effect by creating a complex harmonic and impedance pattern and gating it, I believe we can apply an MOR to any cell regardless of electrical environment. In this way we eliminate all the theoretical constraints imposed by real physical parameters.

The question that remains is what does the MOR actually do? The simple answer is we still don't know, but it's likely that what it is doing is causing an electrostatic stress in the polar bonds that hold together cell walls. I believe that this results in cell walls "peeling" apart literally like layers of an onion. This would not be visible under the microscope - we'd only see the result when the weakened cell wall ruptures under internal pressure.

Where does the frequency come in? Maybe in terms of ionic transit times - we need to give "kicks" at a certain rate to specific ions or ionic complexes to make them move across the membrane. The periodicity of such "kicks" (NOT frequency per se - there is a technical distinction) would depend on the ionic species and the physical properties of the membrane.

There is one piece of evidence that might support this idea. It's well known that exposure to Rife devices releases toxins into the body tissues that cause what has been described as a Herxheimer Reaction.

I don't believe that strictly speaking this is a Herxheimer reaction, but rather what is known as a Schwartzmann Reaction.

Cell walls of bacteria etc, are typically composed of molecules called Peptidoglycans. If you could peel apart the peptidoglycan chains of cell walls you would create a lipoprotein fragment known as endotoxin. Endotoxin, as its name suggests, is a violent systemic toxin that causes an "allergic" type reaction in microscopic quantities. This is a typical Schwartzmann Reaction which would make the subject feel quite uncomfortable.

The body responds to endotoxin in various ways. One mechanism is to release agents called Cytokines. Cytokines are complex agents that have many effects, one is of particular interest because it is called anti-tumour factor or ATF. ATF can inhibit or stop the growth of cancerous tumours.

In this way this theory could also possibly explain one of the effects a Rife machine has on inhibiting cancer.

The Ideal Machine

If the above is correct, it suggests a possible way to design an "ideal" Rife machine, it would also explain the observed effects of Rife's and Hoyland's early machines as well as explaining why more recent machines are more or less effective in various different ways.

To make this ideal machine we know we need three things. A ramped, changing voltage across the tube, a high harmonic content and a gating signal to introduce the MOR.

We could possibly kill two birds with one stone. A sawtooth waveform has a high harmonic content - it consists of all odd plus even harmonics of the fundamental. It also has a ramp that could cause the impedance sweep we need. However, it would be even better if we could increase the harmonic content still further.

A good way to do that would be to simply frequency modulate a sawtooth carrier. All we need to do then is to chop the thing on and off with a square wave MOR signal. The FM would introduce the "phase jiggling" suggested earlier as well.

What sort of frequency range would be needed? High frequencies suffer and lack penetration due to the skin effect. Very low frequencies lack the higher harmonic content and require more harmonics because of the increased spread of permittivities in this range. I believe an "ideal" range is the one used by Phillip Hoyland in the No. 4 Rife Ray - the area around 1Mhz. I suspect this choice of range was no accident on Hoyland's part. It's just about the boundary where you get maximum frequency with minimum skin effect.

So this suggests that the "ideal" machine should consist of a sawtooth carrier wave that is frequency modulated. It should "rest" i.e. 0% modulation around 900Khz and should vary between approx 100Khz (max negative modulation) and 1800Khz (max positive modulation).

The FM modulation can be a sine wave, adjustable in frequency between approx 1Khz and 100Khz. The MOR modulating function can be a square wave that also varies between 0 and approx 100Khz. The amplitude of the final wave across the plasma tube should vary between 0 and approx 2KV. Such a machine should meet all the criteria above.

Other machines

It's worth going back and looking at the early machines and see if there are any similarities to this proposed "ideal" machine. Note, we're using 3 frequencies above.

The Rife Ray No 4 machine uses 3 frequencies - but we have no idea how they were applied. Could it have been similar to what I suggest?

The original Rife Ray also used 3 frequencies. Most people realise it used two, the carrier and the wavelength of super-regeneration, but there is a third implicit frequency, the quench frequency which is not mentioned on the lab notes. The quench is an implicit product of the other two.

What is interesting is that the super-regen function would have created a ramp that would cause the voltage to vary as I predict the ideal machine should. It would have had high harmonic content due to intermodulation between the carrier and super-regen (and also because of the super-regen envelope) and finally the quench would have gated the signal on and off. In short it meets all the criteria of the "ideal" machine. A look at the waveforms on the Rife video also seem to show signs of some FM effect.

Some descriptions of the AZ58 indicate that it may have had a similar function. The waveform of the AZ58 is not so obvious but does meet the basic criteria. Crane or whoever designed the AZ58 was undoubtedly influenced by earlier designs - perhaps Gruner's schematic of his Hoyland machine.

Modern machines such as my own design and Jim Bare's use audio modulated RF carriers. Jim's machine meets one of the criteria better than mine in that the voltage varies with the carrier, mine uses a square wave and lacks the "ramping". But mine produces a higher harmonic content than the RB machine. So it seems we both have two out three.

Other machines have similar effects depending on the waveform used. An EMEM type machine can increase its harmonic content by using irregular duty cycles. Even simple magnetic pulsers can meet the basic criteria because once the pulse hits tissue it induces a voltage which decays more slowly than the magnetic field (a plasma tube does the opposite) and hence causes a kind of ramping effect even with a square pulse. Harmonics are provided by a fast square switch on/off.

Undoubtedly there is scope for experimentation to find the best characteristics for the perfect machine but I believe what I have described above is a good starting point.

Conclusion.

Many researchers have told me that they have had difficulty in reproducing Jim Bare's paramecium experiments. This would make sense taking into account the electrical

environment described above. The effect of such a machine on body tissue would be nearer the ideal due to non-linearities and harmonics introduced by the tissue itself. What this could explain is that similar machines may not demonstrate the Rife Effect (as defined above) because of the electrically simple environment of a microscope slide. In the body however such a machine would exhibit the Curative Effect. As I understand it Jim has got round this problem by adjusting the electrical environment of his slides by making the slide act as a capacitor hence introducing the extra bit of non-linearity and complexity needed to directly affect the samples.

I believe that Rife did the exact opposite in his later machines. He optimised them to produce the Rife Effect, not realising that he was limiting the chances of hitting the ideal pattern for the Curative Effect.

The very early machines of both Rife and Hoyland were more crude and I believe almost entirely by accident happened to meet more of the "ideal" criteria. As such they were a lot more effective at actually both curing patients as well as exhibiting the Rife Effect on microscope slides.

I don't believe that Hoyland realised all this exactly and intentionally designed for it. But I do believe that he was more aware that the effect was not a simple one and that going for more "purity" in the design was not the answer. I believe that Rife only finally realised this after many years of further research during his time with Crane, but that he never put all the elements together exactly as he had done in the beginning.

I also believe that all the attempts made to date to optimise machines for the Rife Effect on microscope slides may well have led researchers away from more effective machines that demonstrate the Curative Effect. In effect the same mistake that I believe Rife made.....

Comments/suggestions on this paper may be sent to ascoon@postmaster.co.uk

Flames....well, I'm too polite to tell you where to send them! :-)

Aubrey Scoon

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