

WEBVTT

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00:00:08.130 --> 00:00:20.970

Wade Lightheart: 321 good morning good afternoon and good evening its way to light heart from by optimizes with another edition of the awesome health podcast and today we've got our really special guests.

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00:00:21.660 --> 00:00:32.760

Wade Lightheart: Gerald pollock who is going to talk about the fourth phase of water and I had been privileged to have comfort communications with Dr Pollack years ago.

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00:00:33.120 --> 00:00:36.210

Wade Lightheart: And we were at bulletproof and i'd also read his.

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00:00:36.210 --> 00:00:48.270

Wade Lightheart: book he is truly a renegade in science really sharing some breakthroughs that have very positive impacts just a little background and his bio.

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00:00:48.870 --> 00:00:58.980

Wade Lightheart: He received his PhD in biomedical engineering from the University of Pennsylvania in 1968 he then joined the University of Washington faculty and is now professor of bio engineering.

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00:00:59.430 --> 00:01:11.640

Wade Lightheart: He was also founding editor in chief of the journal water convener of the annual conference on the physics, chemistry and biology of water and executive director of the Institute for venture science.

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00:01:11.940 --> 00:01:20.460

Wade Lightheart: His interest have range broadly from biological motion and cell biology, to the interaction of biological surfaces with acquiesce solutions.

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00:01:20.730 --> 00:01:35.520

Wade Lightheart: His 1990 book muscles and molecules uncovering the principles of biological mode motion one and excellence award from the Society for technical communication is 2001 book sells gels in the engines of life.

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00:01:35.970 --> 00:01:54.750

Wade Lighheart: One of my personal favorites and his newest book The fourth phase of water beyond solid liquid and vapor when the societies distinguished award their highest distinction, the ladder book went on to receive the word excellence award so Dr pollock welcome to the show.

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00:01:54.900 --> 00:02:00.630

Gerald H Pollack: Oh Thank you so much weight it's a pleasure to be here with you and I apologize for.

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00:02:02.010 --> 00:02:05.100

Gerald H Pollack: At the outset for to two issues first up.

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00:02:06.240 --> 00:02:22.470

Gerald H Pollack: i've i've got a cold and you know old fashioned cold no coven nothing like that which which so you may experience that some sniffles here and zach and there's not my usual digs I, my home.

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00:02:23.670 --> 00:02:34.080

Gerald H Pollack: is being remediated because of mold and i've been evicted during the time and so i'm living in some temporary quarters and.

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00:02:34.830 --> 00:02:51.330

Gerald H Pollack: yeah so like a whole bunch of US i'm mostly working remotely so you'll notice that the walls are a little bit dare they don't have the usual artwork that I prefer and others prefer anyway, here I am and happy happy to be with the way.

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00:02:52.110 --> 00:03:07.410

Wade Lighheart: delighted that you're here to join us, I am one of my most impactful conversations I remember actually i've been in the water conversation from yourself back the truck up i'm fascinated with water, it is foundational of virtually everything.

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00:03:08.430 --> 00:03:10.680

Wade Lighheart: regards to life here and it's it's got some you.

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00:03:10.680 --> 00:03:12.030

Gerald H Pollack: Know yeah.

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00:03:12.120 --> 00:03:23.460

Wade Lightheart: And, but water is far more magical and mystical than people might imagine and you're one of the people who are on the forefront of.

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00:03:24.060 --> 00:03:36.840

Wade Lightheart: kind of a radical radical departure from what water is what it does inside the body and your book sells gels in the engines of life, I think, is one of the breakthrough books about.

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00:03:38.010 --> 00:03:54.450

Wade Lightheart: How the interaction of water is in the in our bodies can you explain how you got into this as a biomedical engineer like can you explain what that is maybe and then how you kind of stumbled upon your discovery which is the fourth phase of water.

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00:03:55.020 --> 00:04:03.840

Gerald H Pollack: yeah i'm happy to to discuss it, so you know, the fact that I was trained, so to speak, as a biomedical engineer.

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00:04:04.320 --> 00:04:13.710

Gerald H Pollack: Really bears not too much relation to what I do i'm a kind of rascal so I I came to the University of Washington many moons ago.

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00:04:14.400 --> 00:04:21.720

Gerald H Pollack: And at the time I had done my PhD work dealing with muscles, particularly the heart muscle.

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00:04:22.290 --> 00:04:30.450

Gerald H Pollack: And so I, it was very natural like any PhD student, you know you work on the topic, and you continue the rest of your life on that topic.

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00:04:31.200 --> 00:04:39.420

Gerald H Pollack: So I followed the easy route and and and and spent a whole bunch of time dealing with muscle contraction.

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00:04:40.110 --> 00:05:02.910

Gerald H Pollack: I was a bit of a rascal and outfield to there, there

has been was still as a dominant a viewpoint, about how muscles contracted at the molecular level and and it seemed almost every experiment that we did contradicted that view and, and so I spent a good deal of my career.

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00:05:03.990 --> 00:05:14.040

Gerald H Pollack: challenging the the prevailing view and without a whole lot of success, people in the field knew about it, but they paid no attention and.

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00:05:15.450 --> 00:05:24.900

Gerald H Pollack: Part of the reason was it could be that we were dead wrong another possible reason is that the person who laid out the original theory.

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00:05:25.560 --> 00:05:34.290

Gerald H Pollack: was a Nobel Prize winner and a member of the famous Huxley family Thomas Henry Huxley darwin's bulldog.

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00:05:34.980 --> 00:05:45.540

Gerald H Pollack: Aldous huxley's brave new world, and this is Andrew Huxley the late Andrew Huxley who'd already won a Nobel Prize and you know, and he put forth the idea.

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00:05:46.320 --> 00:05:56.970

Gerald H Pollack: The prevailing idea about how muscles contracted and, as I mean essentially so much evidence that fails to fit the theory but.

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00:05:57.570 --> 00:06:10.380

Gerald H Pollack: it's kind of as you were alluding to before that that many scientists feel uncomfortable with radical ideas it's easier to follow the mainstream and such and one day.

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00:06:11.910 --> 00:06:14.160

Gerald H Pollack: I hadn't really been thinking about water.

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00:06:15.180 --> 00:06:27.840

Gerald H Pollack: But, but one day my Hungarian friend colleague came to work in my laboratory and and as you're driving from the airport, he said, you know there's a conference in Hungary.

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00:06:28.470 --> 00:06:38.640

Gerald H Pollack: And you should go the conferences, is a commemoration conference for a famous biophysicist who had two interests.

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00:06:39.360 --> 00:06:52.530

Gerald H Pollack: One was muscle contraction and the other was water and in both cases he had points of view that different from mainstream point of view, so I thought Okay, you know I like Hungary, why not take a trip and.

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00:06:53.310 --> 00:07:11.010

Gerald H Pollack: And I tell you I was flabbergasted I presented my view on on muscle contraction and it went fine, but most of the people there were dealing with water and the protagonist that the main person, there was a guy named Gilbert Lynn.

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00:07:12.060 --> 00:07:28.290

Gerald H Pollack: And i'd known something about about links work and linguists professing that the water that's inside our our bodies inside the cell is not like, for example, this liquid water that's sitting in here, which I need to drink.

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00:07:30.600 --> 00:07:33.930

Gerald H Pollack: But that the molecules instead of bouncing around.

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00:07:35.400 --> 00:07:46.500

Gerald H Pollack: furious number of times each femtosecond and randomly orient is it, no, no, no, in biology is much different those water molecules we're all lined up with one another.

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00:07:47.160 --> 00:08:01.230

Gerald H Pollack: Like soldiers at attention and what impressed me was at that conference was the how profound was was his his ideas and not only that, but the evidence.

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00:08:02.220 --> 00:08:18.090

Gerald H Pollack: presented the not just by him he'd been spending most of his life dealing with that but, but also by others, there were a dozen others who who had evidence and and boy I was just blown over by by that, because you know if you think about it.

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00:08:19.380 --> 00:08:29.970

Gerald H Pollack: All the biology cell biology biochemistry physiology they're all based on the simple presumption presumption not evidence presumption that the water.

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00:08:30.330 --> 00:08:48.360

Gerald H Pollack: that's inside our body is just played a liquid water and Gilbert and others, even before him were saying no no that's not true, the water that's inside our our bodies is different it's a they didn't call it what we call it no fourth phase.

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00:08:50.640 --> 00:08:55.140

Gerald H Pollack: They call it or Gilbert link at least refer to it as structured water.

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00:08:55.410 --> 00:09:05.700

Gerald H Pollack: And right in and that's fine in in the book that you mentioned that I wrote to sales gels and the engines of life, I did refer to it as structured water, but now that we know.

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00:09:06.510 --> 00:09:15.060

Gerald H Pollack: A lot more about that kind of water and what we what we found different somewhat from what Gilbert meeting was was professing.

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00:09:16.050 --> 00:09:29.880

Gerald H Pollack: We, we decided to call that fourth phase, water or easy standing for exclusion zone, water and exclusions outcomes from one of the first observations that we made.

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00:09:31.050 --> 00:09:35.880

Gerald H Pollack: That this kind of water, if you look at the microscope as it forms.

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00:09:36.870 --> 00:09:47.370

Gerald H Pollack: it's like a crystal liquid Crystal and crystals, as you know, like ice crystals, for example, as they form they push out all the contaminants such so they exclude.

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00:09:48.210 --> 00:09:58.260

Gerald H Pollack: And so we've been we've been seeing this feature

again and again, and someone suggested why don't you give it a name, instead of going through a long elaborate description, so that people can remember it.

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00:09:58.830 --> 00:10:08.250

Gerald H Pollack: So we called it exclusion zone or easy easy water and it works really well in the US anyway because it's easy to remember.

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00:10:08.850 --> 00:10:22.860

Gerald H Pollack: It doesn't work as well, and other countries, because he said, instead of easy it, you know it doesn't have quite that that ring to it so anyway that's how that's how we got into it and I came back to Seattle.

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00:10:24.090 --> 00:10:32.010

Gerald H Pollack: And first thing I did to reassure myself, I gave one of Gilbert links books to some of my students.

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00:10:33.090 --> 00:10:41.340

Gerald H Pollack: And they came back to me and every one of them said this looks so so interesting and if this guy of link is correct, it means that everything else.

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00:10:42.090 --> 00:10:56.880

Gerald H Pollack: In biology needs to change because it's all based on the presumption that the water inside our body inside ourselves is just ordinary liquid water, but you know it can't be a very simple way you know if you cut yourself.

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00:10:57.930 --> 00:11:07.200

Gerald H Pollack: So if you caught yourself if the water that's inside your body is like liquid water would come pouring out like you know, like water from a broken pipe.

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00:11:07.650 --> 00:11:15.780

Gerald H Pollack: But that doesn't happen, you see, so so it's not it's not like that this is just one time and observation, but there's a whole wealth of.

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00:11:16.410 --> 00:11:34.500

Gerald H Pollack: Information to suggest that the water inside

ourselves is not ordinary liquid water it's more a gel like or as we say, fourth phase or easy water so that anyway, that I don't want to go on and on, but basically That summarizes how we we.

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00:11:35.700 --> 00:11:50.670

Gerald H Pollack: morphed from from dealing with muscles, which contain lots of water and nobody ever points to the possible relevance of the water in in the contraction and I think it turns out to be the central.

61

00:11:51.210 --> 00:12:07.590

Gerald H Pollack: So we got to it that way, and after my students came back and and and said boy, this is so important, reassuring me I thought same we began to do experiments and we found out so much more about the water and that mostly that that appears in the latter book.

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00:12:08.760 --> 00:12:20.160

Gerald H Pollack: Was you don't like as much as the sales gels and the engines of life, which is okay it's called the fourth phase of water it's very popular on Amazon anyway there there's how we got started.

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00:12:21.210 --> 00:12:38.700

Wade Lighheart: it's beautiful um you know early on my research, I came across a documentary called water, the great mystery, and I was struck by when the Professor who had been studying water for 50 years said, well, we don't know that much about water that was pretty interesting.

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00:12:40.530 --> 00:12:57.180

Wade Lighheart: And the second thing I think what's fascinating about water it's one of the only naturally occurring substances that's a solid liquid gas, but you've identified this fourth phase, and this fourth phase or easy water as you've referred to the exclusion zone.

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00:12:58.410 --> 00:13:09.090

Wade Lighheart: What what does that mean what is the application of that, and how does that disrupt many of the assumptions that's happening in biology.

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00:13:09.990 --> 00:13:21.210

Gerald H Pollack: Oh well, practically everything in in biology so so in biology, you know biology is built on the idea that what counts what really counts.



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00:13:21.810 --> 00:13:29.070

Gerald H Pollack: Are the molecules that we hear about so much, of course, the nuclear gases DNA RNA and in terms of.

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00:13:29.580 --> 00:13:39.150

Gerald H Pollack: Immediate action of the cell the proteins are responsible for that so, in theory, the proteins undergo some kind of confirmation will change which brings about.

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00:13:39.540 --> 00:13:53.460

Gerald H Pollack: activity in the particular sale so like in a muscle cell, for example, the idea is that the proteins undergo the muscle proteins undergo some change and that change brings about contraction Okay, and the water is completely irrelevant well.

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00:13:54.030 --> 00:14:03.690

Gerald H Pollack: We found out that the water is is not completely irrelevant and you know if you start with that as a fundamental premise that the water is irrelevant it's just like a.

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00:14:04.170 --> 00:14:14.490

Gerald H Pollack: You know bathtub bathing the more important molecules of life, it doesn't really do anything that's that's the implicit assumption, and everything and, in that we learned about biology.

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00:14:14.880 --> 00:14:23.100

Gerald H Pollack: But if it's not that way if the water is integrally involved in everything that the cell does, which is the main theme of that.

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00:14:23.940 --> 00:14:33.030

Gerald H Pollack: Sales gels and the engines of life that book it brings forth evidence to support that that point of view, then you know everything changes and so.

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00:14:33.840 --> 00:14:43.380

Gerald H Pollack: So when you when you talk about relevance and such it's, we need to start from a new foundation a foundation that involves.

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00:14:44.010 --> 00:14:53.070

Gerald H Pollack: Water and and also involves what hopefully is a correct interpretation of what water molecules actually do and.

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00:14:53.730 --> 00:15:10.920

Gerald H Pollack: And that's where the these so called a structured water or we say fourth phase or easy water comes in, because it's so central to everything everything that that the sale does and we're only beginning to figure out how all of this stuff works so it's very exciting.

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00:15:13.230 --> 00:15:18.780

Wade Lighheart: Brett weinstein and his wife heather who are evolutionary biologist.

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00:15:18.870 --> 00:15:31.230

Wade Lighheart: yeah and his brother Eric have put forth all of them have put forth revolutionary ideas in their collective fields of science, which has been met.

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00:15:31.740 --> 00:15:49.410

Wade Lighheart: By an extensive amount of pushback, even though it would appear, using scientific methodology in its purest form has demonstrated that these individuals have got some massive value to offer the world in different areas of science.

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00:15:50.520 --> 00:15:53.130

Wade Lighheart: As you began investigating this and.

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00:15:54.150 --> 00:16:10.140

Wade Lighheart: Bringing on a renegade idea, if you will, to the powers that be what what was that, like did you meet a lot of resistance, what did that impact your funding standing at university like were you experiencing the early version of can cancel culture.

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00:16:11.430 --> 00:16:30.900

Gerald H Pollack: good way to, to put it, yes, of course, you know it was Albert Albert saying georgie the father of modern biochemistry who discovered vitamin C and was deeply into the idea of structured water he he came out with a lot of.

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00:16:32.610 --> 00:16:52.290

Gerald H Pollack: memorable aphorisms one of them is life is water dancing to the tune of solids so he knew the critical importance of water and another one, which is more relevant to the question that you asked, he said, you know I I have had a lot of ideas, during my long career and the good ones.

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00:16:53.730 --> 00:17:11.250

Gerald H Pollack: The good ideas that I I don't remember the precise words but the good ideas I knew there were good ideas when the response was polarized when some people loved it, and some people hated it then I knew I was onto something, because in inspire that well you know this is.

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00:17:12.900 --> 00:17:15.570

Gerald H Pollack: This reaction in general.

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00:17:16.710 --> 00:17:28.890

Gerald H Pollack: occurs uniformly it occurred, even before the time of Galileo, you know the church didn't appreciate the idea that the sun, rather than the earth was the Center of the solar system.

87

00:17:30.300 --> 00:17:45.870

Gerald H Pollack: And so, Galileo suffered house arrest, and he was prohibited from ever publishing anything after that and, and this is has gone on, and even in the water field also there were.

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00:17:46.410 --> 00:17:52.440

Gerald H Pollack: A couple of people who who suffered we can get to it later if we have time because the stories are kind of interesting.

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00:17:53.310 --> 00:18:07.170

Gerald H Pollack: And I thought at first that I was maybe the only if you like, to call it renegade I I like to think of it as truth truth seeking doesn't mean we found it but we're attempting to find it.

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00:18:08.070 --> 00:18:19.410

Gerald H Pollack: it's normal, it would be the exception and I thought I was the exception because I managed somehow to maintain a laboratory with funding for many, many years.

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00:18:20.820 --> 00:18:21.270

Gerald H Pollack: and

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00:18:22.440 --> 00:18:22.890

Gerald H Pollack: Excuse me.

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00:18:25.500 --> 00:18:28.410

Gerald H Pollack: And still to this day, on the other hand.

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00:18:29.550 --> 00:18:32.580

Gerald H Pollack: I I began to notice, as the years went by.

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00:18:33.930 --> 00:18:36.960

Gerald H Pollack: That there was appreciable criticism.

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00:18:38.070 --> 00:18:48.540

Gerald H Pollack: You know, some of it, some of the criticism was meaningful others my sense is that there's no meaning at all it's just a just an attempt to.

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00:18:50.130 --> 00:18:58.230

Gerald H Pollack: to solidify the status quo and a lot of people like to do that because it's popular you know if you if you stay out a claim.

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00:18:58.650 --> 00:19:06.840

Gerald H Pollack: That Oh, all this stuff about four phases is nonsense doesn't make any sense you're popular because many of your colleagues who are studying water.

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00:19:07.530 --> 00:19:19.590

Gerald H Pollack: don't want radical change and feels unsettling uncomfortable right you've been spending your whole career studying the three phases of water, how they interact and someone comes around.

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00:19:20.490 --> 00:19:27.450

Gerald H Pollack: And says hey there's a fourth phase and provides evidence for it, so the usual tendency is his.

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00:19:28.380 --> 00:19:36.540

Gerald H Pollack: reluctance to accept it and if someone comes around

and says Oh, I think it's wrong because of xyz those those people are embraced.

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00:19:37.170 --> 00:19:54.330

Gerald H Pollack: it's very popular so i've had my share of it, and I must say, less than I expected and and some of the some of the Internet comments just have no substance to them, it just oh impossible fourth phase of water and stuff like that there were have been some meaningful.

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00:19:56.820 --> 00:19:57.540

Gerald H Pollack: critiques.

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00:19:58.830 --> 00:20:04.950

Gerald H Pollack: to which I have responded I don't think they're valid, but you know it's up to others to say.

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00:20:06.570 --> 00:20:25.470

Gerald H Pollack: And i've suffered in my department to I become a kind of pariah in in my own academic department, and I think they would be happy if I retire quit or something like that I had no such plans, because this is so exciting that why, why would I, why would I want to quit.

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00:20:26.790 --> 00:20:39.720

Gerald H Pollack: And you know i've suffered, for example, constant pressure on my space on my laboratory as a result and other people who who take pleasure and.

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00:20:41.010 --> 00:20:47.490

Gerald H Pollack: In letting the students know that this is not a good place my laboratory is not a good place to work.

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00:20:48.540 --> 00:20:54.450

Gerald H Pollack: On the other hand, you know, this is not the major theme of everything that happens, is it kind of like a.

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00:20:55.470 --> 00:21:18.600

Gerald H Pollack: Like a little bit of a pin and the side and it's some kind of sometimes unnerving and I do need to spend time other other times to combat some of it, which is the most unreasonable features, I do but, but basically there are so many people who are

embracing this who who you know.

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00:21:19.680 --> 00:21:31.380

Gerald H Pollack: have found the evidence that we present plausible meaningful and with an enormous implications for the future and so many different realms and and it's gratifying I get.

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00:21:31.860 --> 00:21:48.030

Gerald H Pollack: It many emails per day, a typical email was hey I read your fourth phase book it's great, but I got six questions and then you know, three pages later in the email and trying to decipher what their questions really are and.

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00:21:49.080 --> 00:22:07.260

Gerald H Pollack: So so it's consuming I tell you I suppose it's the same for you get so many emails and you simply can't respond to all of them, so it's two sided, on the one hand it's gratifying, on the other hand, it takes up my all my time so.

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00:22:07.290 --> 00:22:24.510

Wade Lighheart: yeah it's one of the downsides of when an idea or something your world gains popularity is there's of questions and associative and well meaning ones oftentimes I know, several hundred thousand unanswered emails in my book.

114

00:22:24.540 --> 00:22:25.770

Gerald H Pollack: Oh, you do oh wow.

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00:22:27.270 --> 00:22:41.610

Wade Lighheart: That outsources the generalized questions i'll answer them once and then put them in an faq and those are distributed and then, when the new stuff comes in, and I think we're up over 1000 answers now, so I get it, but let's get more back to.

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00:22:42.750 --> 00:22:57.540

Wade Lighheart: This fourth phase of water, the easy water as dark discussed it, what is it specifically it it's it's implement implications in human biology or all cellular biology, I guess.

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00:22:58.230 --> 00:22:59.160

Gerald H Pollack: Okay um.

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00:23:00.420 --> 00:23:01.380

Gerald H Pollack: Well, I am.

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00:23:02.730 --> 00:23:10.020

Gerald H Pollack: I haven't told you about about the properties of this and maybe I get my response there, there are three or four features that.

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00:23:11.310 --> 00:23:19.770

Gerald H Pollack: underlie that describe this phase that are, I think, among the more important ones, to mention and then after stating that I can.

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00:23:20.100 --> 00:23:27.750

Gerald H Pollack: gather the implications if I forget your first question remind me because, once I get into something I kind of forget.

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00:23:28.260 --> 00:23:28.860

Gerald H Pollack: Where I am.

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00:23:30.330 --> 00:23:34.110

Gerald H Pollack: it's a it's one of the consequences of Gray hair.

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00:23:36.150 --> 00:23:38.700

Gerald H Pollack: Okay, so So what is it so.

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00:23:40.050 --> 00:23:44.040

Gerald H Pollack: We found that that what what happens is, if you have water.

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00:23:45.720 --> 00:23:53.430

Gerald H Pollack: And, and the water is the water molecules are adjacent to some of the water molecules are adjacent to.

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00:23:53.820 --> 00:24:09.090

Gerald H Pollack: Particular kinds of surface that is hydrophobic surface water loving surfaces not like teflon where the water beads up, but by surfaces were if you were to drop drop that it would spread out and we found that with most such surfaces.

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00:24:10.140 --> 00:24:21.750

Gerald H Pollack: You get a massive change when the water meets the surface so So the first sort of layer of water molecules undergoes a massive change and the individual h2o structure.

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00:24:22.410 --> 00:24:34.200

Gerald H Pollack: Changes radically and it changes into sheet like structure, just like graphene and some of your listeners know about graphene it's got this hexagonal motif it looks very similar.

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00:24:35.160 --> 00:24:49.140

Gerald H Pollack: And, and that first layer of formerly water molecules that have transitioned into this that first molecular layer serves as a template for the growth of the next layer and then next to the next, and these layers build up.

131

00:24:50.100 --> 00:25:08.700

Gerald H Pollack: And that's what these layers and that they can build up in in the laboratory up to on the order of a million layers under the right circumstances I mean a huge huge numbers of layers as you building and building in the salad it's different because there's no space for so many layers.

132

00:25:10.080 --> 00:25:16.980

Gerald H Pollack: So so anyway that's that's the first is, is that it has this hexagonal motif a bit like ice, but not ice.

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00:25:19.710 --> 00:25:31.890

Gerald H Pollack: The second feature is is that it's not neutral it's actually charged, so what happens is as as these easy layers get built they get built from individual water molecules.

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00:25:32.520 --> 00:25:41.070

Gerald H Pollack: And the individual water molecules break up into H plus positive O H minus negative and the O H minuses.

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00:25:41.670 --> 00:25:49.080

Gerald H Pollack: Typically, will will be the construction blocks for the build up of the of these layers and they went out.

136



00:25:49.560 --> 00:26:07.560

Gerald H Pollack: The age pluses or leftover and they get passed out into the ordinary water so would you wind up with you end up with these layers of negatively charged easy for phase, water and beyond these layers are lots of protons lots of positive charges so it's like a battery.

137

00:26:08.910 --> 00:26:09.360

Gerald H Pollack: Now.

138

00:26:10.470 --> 00:26:19.260

Gerald H Pollack: If you think of a battery you think of your smartphone and if you forget to plug it in overnight you ain't got nothing left, so to speak.

139

00:26:19.260 --> 00:26:29.010

Gerald H Pollack: Right it doesn't doesn't work so batteries, need to be charged and it's the same with molecular batteries principle is the same, and so you know question as well.

140

00:26:30.060 --> 00:26:39.930

Gerald H Pollack: Where where where does that energy come from and I gotta admit we we spent several years scratching our collective heads that's why I don't have much hair left.

141

00:26:41.520 --> 00:26:42.810

Gerald H Pollack: And we couldn't figure it out.

142

00:26:43.980 --> 00:26:48.540

Gerald H Pollack: You know you can't just take the Chamber and plug it into the receptacle or something like that.

143

00:26:49.350 --> 00:27:01.410

Gerald H Pollack: So it turns out, one of the students in the lab was who was doing what he was not supposed to do, I encourage these young students to do that and we've had quite a few findings from these young students.

144

00:27:02.190 --> 00:27:11.250

Gerald H Pollack: And he had he was at a chamber sitting experimental Chamber sitting on the bench and he noticed that there was a goose neck lamp sitting next to it.

145

00:27:11.700 --> 00:27:31.440

Gerald H Pollack: So he shines a lab on Chamber, and he calls me over to see what happens so the this exclusion zone, which is typically a uniform size in the region of this that was illuminated grew by leaps and bounds it grew isley three times, or something like this.

146

00:27:32.490 --> 00:27:46.560

Gerald H Pollack: huge amount and and I like came and I said well why don't you turn off the lamp or remove it see what happens and it went back to the original so so first of all it's all reversible a second you know didn't take a.

147

00:27:48.000 --> 00:27:48.990

Gerald H Pollack: How should I say, a.

148

00:27:50.070 --> 00:28:10.410

Gerald H Pollack: rocket scientist to figure out that hey if light light is causing this thing to grow, it sounds like photons might be responsible for the energy that's responsible for the build up of this easy you know it's an obvious kind of conclusion so we tested many wavelengths the.

149

00:28:11.760 --> 00:28:19.980

Gerald H Pollack: And it turns out, we tested the ultraviolet moving getting too long or wavelengths into the visible wavelengths and then up to the reds.

150

00:28:20.400 --> 00:28:36.270

Gerald H Pollack: And infrared and it turns out that most of us wavelengths are almost no impact, but infrared was astounding and its impact very tiny amounts of infrared energy infrared light.

151

00:28:37.320 --> 00:28:46.230

Gerald H Pollack: would cause enormous growth like 1000 times more than some of the visible wavelengths so we had our culprit, it was infrared energy.

152

00:28:47.190 --> 00:28:56.610

Gerald H Pollack: And most most people don't don't don't really understand where infrared energies is coming from you know we think of.

153

00:28:57.510 --> 00:29:15.150

Gerald H Pollack: We think of like the toaster or the electric oven, you know we feel the heat and we say oh yeah they're generate it's generating infrared energy and that's that's quite true, but it turns out that everything is generated generating infrared energy and the way you can prove this to yourself.

154

00:29:17.070 --> 00:29:25.410

Gerald H Pollack: is well the physicists know it, but you can prove it to yourself by darkening your room completely dark you can't see anything.

155

00:29:26.040 --> 00:29:36.660

Gerald H Pollack: Your cell phone camera can't collect an image, even the most sensitive ones, so you can see nothing it's pitch black no visible light is coming to your eye.

156

00:29:37.080 --> 00:29:47.610

Gerald H Pollack: And whenever if you whip out your infrared camera that is like an ordinary camera with an infrared sensor instead of a visible light sensor you got a beautiful image of everything.

157

00:29:48.990 --> 00:29:56.520

Gerald H Pollack: And that's why it's used by military for night viewing because everything's generating infrared energy, even when it's cold out there.

158

00:29:57.270 --> 00:29:58.260

Gerald H Pollack: So the energy.

159

00:29:58.890 --> 00:30:00.870

Wade Lightheart: As well pick up infrared I believe is.

160

00:30:00.870 --> 00:30:01.800

Gerald H Pollack: I didn't hear you sorry.

161

00:30:01.980 --> 00:30:05.340

Wade Lightheart: isn't it snakes their eyesight built on him for.

162

00:30:05.340 --> 00:30:07.950

Gerald H Pollack: I could be I don't know that.

163

00:30:07.980 --> 00:30:10.200

Wade Lighthead: I could see pray in the dark.

164

00:30:10.650 --> 00:30:22.410

Gerald H Pollack: yeah that that makes a lot of sense, I mean the limitations of our Retinal system or you know you might say, kind of arbitrary because we're dealing with spectrum of wavelengths and just because.

165

00:30:23.220 --> 00:30:31.050

Gerald H Pollack: The sensitivity of our retina cuts off at about 800 nanometers wavelength that's in the red doesn't mean that other species.

166

00:30:31.920 --> 00:30:42.930

Gerald H Pollack: might have the capacity to visualize longer wavelengths which puts you into this so called infrared light in France, all over, and what that means is that the energy that's required to create.

167

00:30:43.710 --> 00:30:50.130

Gerald H Pollack: This easy is all over the place, so it means we always have some and if we had more infrared energy.

168

00:30:51.300 --> 00:31:11.730

Gerald H Pollack: You get more of it, so the paradigm is really simple, and so we can get infrared energy coming from the environment, and we do, but also we metabolize and the metabolic metabolic heat we generate heat inside this heat, basically, is infrared and it's also used to build easy so.

169

00:31:12.840 --> 00:31:15.810

Gerald H Pollack: So those are Those are a few of.

170

00:31:16.950 --> 00:31:27.090

Gerald H Pollack: You might say basic basic features and then getting back to you or would just just to summarize, we have this layer the.

171

00:31:28.110 --> 00:31:41.850

Gerald H Pollack: Easy that grows and it grows in the presence of infrared light which there's a lot and it's typically negatively charged and the region beyond is positively charged, so we have something like battery.

172

00:31:43.200 --> 00:31:51.210

Gerald H Pollack: And, of course, that has a lot of significance to it, because we can we can generate electrical energy just by.

173

00:31:51.780 --> 00:32:09.450

Gerald H Pollack: By putting one electrode and the negative zone one electrode of the positive zone, you know and and connect those two electrodes to a load of some sort which could be a lamp or something and in the laboratory no question that works we've demonstrated that you can like an led.

174

00:32:11.280 --> 00:32:15.450

Gerald H Pollack: Which doesn't require a whole lot of cards, and so in in theory.

175

00:32:16.710 --> 00:32:23.670

Gerald H Pollack: You this this could be used as deviates from your question but it's interesting, so I need to see.

176

00:32:26.190 --> 00:32:27.000

Gerald H Pollack: I need to mention.

177

00:32:28.380 --> 00:32:33.750

Gerald H Pollack: You can get electrical energy from water and light is really what i'm getting to, and you know.

178

00:32:34.500 --> 00:32:41.730

Gerald H Pollack: we're in a position now the world is in a position where it's so hungry for for energy, and this is completely renewable.

179

00:32:42.210 --> 00:32:57.690

Gerald H Pollack: It uses water and it uses light ambient light you don't need anything else but what's in the environment, I think it has a future, but it needs development and you're perhaps familiar with the concept of the valley of death.

180

00:32:58.260 --> 00:32:59.610

Gerald H Pollack: You know you've met yeah.

181

00:32:59.700 --> 00:33:10.230

Gerald H Pollack: So you've got an observation in the laboratory and in order to to convert that to something that's really useful for everybody, you have to cross this deep.

182

00:33:10.620 --> 00:33:21.840

Gerald H Pollack: dark valley of death and a lot of adventures in the laboratory why wind up at the at the abyss at the bottom of this valley and never make it out and so crossing.

183

00:33:22.680 --> 00:33:34.200

Gerald H Pollack: Crossing this gap, that is, the valley of death requires a lot of investment and a lot of work, a lot of research so anyway, I just wanted to mention that, but your question no God.

184

00:33:34.290 --> 00:33:35.400

Wade Lighheart: yeah so before.

185

00:33:35.580 --> 00:33:37.110

Wade Lighheart: let's say we have.

186

00:33:38.490 --> 00:33:46.590

Wade Lighheart: we allocate specifically we know how to increase this easy water by the heavy use of infrared.

187

00:33:46.860 --> 00:33:51.240

Wade Lighheart: yeah what potential impact does that have on a biological system.

188

00:33:51.870 --> 00:33:55.380

Gerald H Pollack: Well, it raises the question of where we get our energy so.

189

00:33:58.110 --> 00:34:11.550

Gerald H Pollack: I know you're into energy and I i've seen almost nobody who who just by looking at your face and physique you're full of so full of energy that.

190

00:34:12.090 --> 00:34:24.600

Gerald H Pollack: is really enviable anyway that's besides a side point but but yeah where do you get your energy, so you know if I were to ask a biologist, for example, where do we get our energy and and.

191

00:34:25.680 --> 00:34:32.370

Gerald H Pollack: And the reflexive response will be I will get it from food and food goes through various metabolic cycles.

192

00:34:33.000 --> 00:34:53.310

Gerald H Pollack: And we get ATP and and this chemical ATP is responsible for supplying all the energy for everything we need it works very simple it isn't really simple, because if you read the biochemistry brooke is practically impenetrable and so complicated and yeah one thing that Mother Nature.

193

00:34:54.600 --> 00:35:03.270

Gerald H Pollack: works in a simple way outcomes razor you know you you've got two competing mechanisms and the simpler one is the one that's likely.

194

00:35:03.690 --> 00:35:11.520

Gerald H Pollack: To be correct, and I think many scientists have adopted that except recently, maybe the past hundred years it's changed.

195

00:35:12.000 --> 00:35:23.610

Gerald H Pollack: With with the advent of quantum mechanics which is, which is really abstract mathematics and nobody understands it because there's no intuition involved is mathematics, you see, with no.

196

00:35:24.240 --> 00:35:32.790

Gerald H Pollack: So, as the great Richard fineman said any anybody who says they understand quantum mechanics is either lying or stupid.

197

00:35:33.330 --> 00:35:39.240

Gerald H Pollack: Because nobody was that was it was that in his book surely surely you're joking.

198

00:35:39.960 --> 00:35:41.100

Wade Lighthead: yeah you're talking about that.

199

00:35:41.100 --> 00:35:42.090

Wade Lighthead: Book I was introduced.

200

00:35:42.120 --> 00:35:44.670

Gerald H Pollack: yeah wonderful so you know that's the thing.

201

00:35:45.120 --> 00:35:54.210

Gerald H Pollack: find what was the hero and he's everybody's hero, because he was smart clever and he had a sense of humor and he can explain things very clearly.

202

00:35:55.260 --> 00:35:55.830

Wade Lighthead: yeah he was.

203

00:35:56.760 --> 00:36:09.180

Wade Lighthead: I think part of this is what's fascinating about the Internet in the explanation of maybe what takes decades to discover in.

204

00:36:09.720 --> 00:36:27.330

Wade Lighthead: illustrated Bible ways that people, although they may not understand the depth of the science, they can take the practical application of things and then apply it in the world of form, so out of kind of theoretical ideas, and I think that was was was was fascinating about fineman.

205

00:36:28.740 --> 00:36:44.130

Wade Lighthead: I was introduced to his book by a fellow by the name of john virtual who ended up was a physicist friend of mine, I was a jock and we we got over the distribution of ketchup in a bottle and what was causing that if you spend the bottle as opposed to shaking it.

206

00:36:44.580 --> 00:36:53.460

Wade Lighthead: And that's how we started a friendship and I had a passion for physics and then he introduced me to Dr fireman's book and that's what struck me about it as as as.

207

00:36:54.030 --> 00:37:04.740



Wade Lighheart: brilliant is Dr fineman was he was also able to take very radical conceptual very difficult science and put it into a humorous and applicable way.

208

00:37:05.040 --> 00:37:11.580

Wade Lighheart: So that people could understand and say Okay, I might not understand all the physics behind it, but I get the general principle of where this.

209

00:37:12.180 --> 00:37:14.610

Gerald H Pollack: Application a master that for sure.

210

00:37:14.730 --> 00:37:26.580

Wade Lighheart: yeah so i'm going to circle back around and so so now we're We understand that there's this fourth phase, and now we understand how this energy is produced um so then what's its application.

211

00:37:26.610 --> 00:37:33.600

Gerald H Pollack: Okay, so, so the question that I began to to allude to is where where do we get our our energy and.

212

00:37:34.350 --> 00:37:47.010

Gerald H Pollack: The summer I said well just about everybody in the field will say we get it from ATP which comes from the food we eat, but that raises a question and the question is, how is it possible that somebody could not eat.

213

00:37:48.150 --> 00:37:54.810

Gerald H Pollack: and still have plenty of energy, so I reminder, a woman was a dancer and she telephone me.

214

00:37:56.160 --> 00:38:03.150

Gerald H Pollack: She thought I might know something about the subject, what do I know she said, you know every now and then, I get the urge to stop eating.

215

00:38:04.140 --> 00:38:14.970

Gerald H Pollack: And i'll stop eating for three four weeks I bought a continued dancing and you know what kind of energy, it takes to to continue dancing and if she's doing it in a professional ways probably even more.

216

00:38:16.440 --> 00:38:27.570

Gerald H Pollack: And she'll do this for three four weeks and that's nothing compared to some of the people who have claimed that they don't eat and occasionally in humid climate say don't even drink like.

217

00:38:28.110 --> 00:38:42.600

Gerald H Pollack: I forget his name something James from India, perhaps you know the guy who claimed for 65 years he hadn't eaten anything he said he was approached by two angels, and they told him that all he had to do.

218

00:38:43.680 --> 00:38:51.840

Gerald H Pollack: was to pray and meditate and he didn't have to eat and until after 65 years of doing that somewhere in the remote jungles of India.

219

00:38:52.890 --> 00:38:59.430

Gerald H Pollack: And he came to the government, because he thought well it's his obligation he's doing something that's so unusual.

220

00:39:00.600 --> 00:39:12.570

Gerald H Pollack: So, whether the government, they checked his DNA and such and they found nothing unusual and then he was examined by a group of doctors, the leader of of of which became a friend of mine.

221

00:39:14.130 --> 00:39:25.020

Gerald H Pollack: And he assembled a group of 15 physicians to examine this guy there was a cardiologist urologist pulmonologist every Allah just that you could imagine.

222

00:39:25.380 --> 00:39:30.300

Gerald H Pollack: And they put him in a in a hospital room the sealed room and no water no food.

223

00:39:30.990 --> 00:39:40.680

Gerald H Pollack: For I can't remember it was either 10 days or 14 days I don't remember, but you know it's clear that have video cameras monitoring and everything was sealed.

224

00:39:41.070 --> 00:39:53.880

Gerald H Pollack: So, nobody could go in and and they attest to the fact that he he had nothing and his physiology which they were there to measure as much as they could because he wouldn't allow penetration of his body.

225

00:39:55.170 --> 00:40:07.830

Gerald H Pollack: Like signal needle entered something I heard his report he presented it at our annual conference, the physics, chemistry biology of water which we organize each year with fascinating conference know in Germany.

226

00:40:08.970 --> 00:40:12.240

Gerald H Pollack: Of and he couldn't come, but he sent the video.

227

00:40:13.560 --> 00:40:21.630

Gerald H Pollack: of describing the measurements and such and everything seemed normal and then he told me afterwards, an email is that, after after all of this was over.

228

00:40:22.380 --> 00:40:32.460

Gerald H Pollack: Of course he he wanted to interview this guy and chat with him and there was no real opportunity, but his office when way up in the top of the hospital building and not downstairs and so.

229

00:40:32.910 --> 00:40:50.160

Gerald H Pollack: invited the guy to walk up the stairs in the guy ran up the stairs faster than the doctor could run up the stairs after having eaten nothing for well, maybe 65 years but maybe only 10 days or two weeks so, so this is real and and.

230

00:40:51.180 --> 00:40:55.950

Gerald H Pollack: there's also a film it's called in the beginning, there was light.

231

00:40:57.300 --> 00:41:12.060

Gerald H Pollack: And the the producer is a guidance strobing are from Austria and it's fascinating it's interviews of something like 15 or 20 people who stopped eating so okay so i'm giving you all this background.

232

00:41:13.170 --> 00:41:16.110

Gerald H Pollack: To suggest that this is real, that this is this is.

233

00:41:16.680 --> 00:41:22.740

Wade Lightheart: nanda author of autobiography of a yogi or wrote about this almost 80 years ago.

234

00:41:23.790 --> 00:41:30.720

Wade Lightheart: His identification geyary Baba lady who had not eaten in many decades and the famous.

235

00:41:32.280 --> 00:41:45.780

Wade Lightheart: German stigmata Teres Newman, who has been well documented about her, she would actually go through the stigmatic experience every week, and she also did not eat, but both of those were identifiable and.

236

00:41:46.530 --> 00:42:01.080

Wade Lightheart: And I have met what's commonly called breath arians and one individual he said he hadn't consumed any food and I forget was at that time was three or four decades, it was a radical man time and he seemed to be not suffering from it.

237

00:42:01.680 --> 00:42:06.540

Gerald H Pollack: Now, no, no, these people do very well apparently and, by the way, i'm reading.

238

00:42:07.740 --> 00:42:22.200

Gerald H Pollack: The autobiography right now of yoga and I just started because i'm staying temporarily at a complex, which is called a nanda which actually run by this group and it's wonderful place.

239

00:42:22.470 --> 00:42:24.330

Wade Lightheart: up in Carson are in Nevada city, I mean.

240

00:42:24.420 --> 00:42:27.300

Gerald H Pollack: No, this one is near Seattle just north of Seattle.

241

00:42:27.390 --> 00:42:28.920

Gerald H Pollack: Oh thanks Colin would.

242

00:42:30.210 --> 00:42:31.650

Wade Lighheart: fall it's a great organization.

243

00:42:31.710 --> 00:42:47.310

Gerald H Pollack: it's a wonderful organization i've come to really appreciate them a whole lot so it's by coincidence, anyway, so the two of us agree this is real people can get by without eating, and so what where does that leave the hypothesis that you get all your energy from food.

244

00:42:48.540 --> 00:42:58.440

Gerald H Pollack: It doesn't make sense, something is wrong because these people are not eat any food and they seem to have plenty of energy yeah so So where does the energy come from well.

245

00:42:59.220 --> 00:43:10.470

Gerald H Pollack: I think it's possible that at least some of the energy that we get comes from the water and the easy water easy water is negative, the region beyond as positives like a battery and.

246

00:43:11.580 --> 00:43:17.970

Gerald H Pollack: You know, when we go to the cell level the negative charges are inside the cell positive charges are are outside.

247

00:43:19.980 --> 00:43:22.530

Gerald H Pollack: And these negative charges that are sitting inside the cell.

248

00:43:23.730 --> 00:43:33.660

Gerald H Pollack: I would argue, as a result of the negatively charged easy water rather than other ideas that we could talk about if you want, which I think are bankrupt.

249

00:43:34.620 --> 00:43:49.620

Gerald H Pollack: But very popular it's the water that has it and and these negative charges would like nothing more than to get away from one another, because they are naturally repel and so that constitutes potential energy.

250

00:43:51.210 --> 00:44:00.810

Gerald H Pollack: And that potential energy could be used, and probably is used, especially in these people who don't eat but to some unknown extent by.

251

00:44:02.400 --> 00:44:16.680

Gerald H Pollack: People who do eat we just simply don't know what fraction of our energy comes from the water and what fraction comes from ATP and I just interject or a remark about about ATP.

252

00:44:17.730 --> 00:44:24.690

Gerald H Pollack: You know this is this idea is how many years old, I, if I have it right 6070 years old.

253

00:44:25.620 --> 00:44:37.770

Gerald H Pollack: And it was it was put forth by a group of chemists who who thought that ATP had a special high energy bond when broken it would release the energy and one year later, that was.

254

00:44:38.460 --> 00:44:46.080

Gerald H Pollack: challenged by another chemistry group who said they made up arithmetic error, there is no such thing as a high energy bond.

255

00:44:47.160 --> 00:44:52.860

Gerald H Pollack: And Gilbert ling in his website, which is still active despite his recent passing.

256

00:44:54.240 --> 00:45:03.420

Gerald H Pollack: Reviews that and talks about it and says that you know it's not an all clear that the energy that any energy at all comes from.

257

00:45:04.290 --> 00:45:10.890

Gerald H Pollack: ATP is high energy bond and I don't know who's right and who's wrong, I guess, I haven't taken the time.

258

00:45:11.670 --> 00:45:28.020

Gerald H Pollack: And perhaps I haven't the right background to go through the arithmetic or computational details that led to that conclusion, but you know until somebody really studies that and says hey the original ideas right or the original idea is wrong.

259

00:45:29.580 --> 00:45:39.420

Gerald H Pollack: it's uncertain even even though it's widely accepted

by everyone, so, so we have a bit of unknown that we're we're dealing with we really.

260

00:45:40.680 --> 00:45:42.540

Gerald H Pollack: don't know for sure.

261

00:45:44.550 --> 00:45:47.940

Gerald H Pollack: Where our energy comes from however it's pretty clear.

262

00:45:49.380 --> 00:46:01.080

Gerald H Pollack: it's pretty clear that it can't all come from food because people don't eat and you know very, very simple logic isn't it i'm sorry, they still have.

263

00:46:02.580 --> 00:46:04.800

Gerald H Pollack: Plenty of plenty of energy.

264

00:46:05.880 --> 00:46:10.290

Gerald H Pollack: So this is a you know, this is an area area for the future and.

265

00:46:11.520 --> 00:46:12.120

Gerald H Pollack: We have so.

266

00:46:12.360 --> 00:46:13.980

Wade Lighheart: You bring up something I think that's.

267

00:46:15.780 --> 00:46:25.800

Wade Lighheart: commonly understood in eastern philosophy and the concept of on it, and she the conceptual ideas of charging the body.

268

00:46:26.130 --> 00:46:29.820

Wade Lighheart: yeah through types of breathing or exercise that.

269

00:46:30.240 --> 00:46:33.660

Wade Lighheart: allows one to invigorates organs invigorated the body and.

270

00:46:34.110 --> 00:46:41.940

Wade Lightheart: Which is often Pooh poohed by physiologist and until they actually go and start applying it for themselves, and I would say is.

271

00:46:42.420 --> 00:46:56.070

Wade Lightheart: The easiest representation of this is, you can go to a really great orchestra session and the hit the perfect crescendo of notes and you feel an electrical current rise up the hair within your.

272

00:46:56.070 --> 00:47:00.360

Wade Lightheart: Body going well, it wasn't from the popcorn I consumed, and it was.

273

00:47:01.380 --> 00:47:03.570

Wade Lightheart: consumed or the glass of wine, I might have had.

274

00:47:03.960 --> 00:47:11.370

Wade Lightheart: There was some other aspect that activated the energy or if you can go to a sports stadium stadium and see a crowd invigorated.

275

00:47:12.210 --> 00:47:22.110

Wade Lightheart: Through the actions of people and or any kind of groups, the the madness of crowds we see a distribution of energy, when people are gathered in the crowd where.

276

00:47:22.440 --> 00:47:40.980

Wade Lightheart: They may become energized over and above what they are an independent, so there seems to be other realms of energy transfer that we collectively experience but we kind of rationalize out because of the paradigms which we've been indoctrinated with.

277

00:47:42.960 --> 00:47:43.800

Gerald H Pollack: So right on.

278

00:47:44.040 --> 00:47:44.550

Absolutely.

279

00:47:46.260 --> 00:47:57.570

Gerald H Pollack: yeah so you you you hit on a topic that is no



central to to our research endeavor looking looking at this kind of subtle energy.

280

00:47:59.070 --> 00:48:12.390

Gerald H Pollack: And and and examining the influence of just just going back to, for example, this guy who didn't need for 65 years didn't need, but he had to meditate and pray and the question is.

281

00:48:13.170 --> 00:48:20.850

Gerald H Pollack: For those people who are meditating like the monks of Tibet that were studied many, many years ago, their physiology changes.

282

00:48:21.510 --> 00:48:34.770

Gerald H Pollack: And as possible that this kind of energy subtle energy is absorbed it to a greater extent by such people, compared to myself, for example, or maybe you i'm not sure what you do in your spare time but.

283

00:48:35.670 --> 00:48:43.260

Gerald H Pollack: could be in and so that could be the reason why some of these people are able to to survive.

284

00:48:45.450 --> 00:48:50.040

Gerald H Pollack: quite well without without eating because they they may pick up, for example.

285

00:48:51.960 --> 00:49:03.330

Gerald H Pollack: Electrical charge or negative electrical charge and builds easy water and the easy water easy water is critical for every every function and.

286

00:49:04.410 --> 00:49:17.610

Gerald H Pollack: I was going to to get to that when you asked me the question and I I I went along a circuitous route, but you say what you know what what good is this for biology, and so I never quite got to the answer and.

287

00:49:18.090 --> 00:49:18.510

Gerald H Pollack: I like.

288

00:49:19.050 --> 00:49:25.470

Gerald H Pollack: Okay, so so yeah so if every cell in your body is filled with easy water.

289

00:49:27.180 --> 00:49:33.960

Gerald H Pollack: To to, shall we say, act in a normal away you got to make sure that every cell is fairly easy water.

290

00:49:34.350 --> 00:49:46.560

Gerald H Pollack: If the soil is deficient if it doesn't have enough easy water than it can't function and it becomes dysfunctional or even pathological so the strategy for the body is to do everything you can do to.

291

00:49:47.670 --> 00:49:55.890

Gerald H Pollack: increase the amount of easy water that's in your cell and there are a half dozen experience which I, I can talk to.

292

00:49:56.850 --> 00:50:14.040

Gerald H Pollack: You how you can naturally do that, otherwise you see see what happens is what we've discovered is when a cell functions like let's say muscle cell because i'm just so familiar with muscle cells so usually a muscle cell will be relaxed not doing anything.

293

00:50:15.390 --> 00:50:23.070

Gerald H Pollack: And, and all the water is easy water, but then when it's activated to contract when the frog wants to catch the fly.

294

00:50:24.090 --> 00:50:24.780

Gerald H Pollack: For example.

295

00:50:25.860 --> 00:50:38.100

Gerald H Pollack: What happens is that the water undergoes a transition from easy water to ordinary liquid water you say, and this transition causes or is.

296

00:50:38.910 --> 00:50:50.760

Gerald H Pollack: i'm not sure causes is the right word but in synchrony with with the proteins is the water and the proteins that undergo a massive change and that change precipitates contraction that is contraction.

297

00:50:51.990 --> 00:51:06.960

Gerald H Pollack: yeah and so, then, after that, of course, you got to get back to the original state when the muscle is finished contracting and that's the energy requiring state, and so you can imagine if you've played two matches of tennis well for you, maybe five matches tennis I don't know.

298

00:51:07.980 --> 00:51:14.340

Gerald H Pollack: You know your beat and some of your muscles might be cramped what does that mean well well cramped means contracted.

299

00:51:15.000 --> 00:51:28.770

Gerald H Pollack: So they can't relax again because they don't have enough energy to get back to convert the ordinary water into easy water and not enough energy to restore the proteins to their original state.

300

00:51:30.150 --> 00:51:46.140

Gerald H Pollack: You see, so so that's why that's where you can get into trouble just as one example of how, if you don't have enough energy or enough water enough easy water you can't can't come back you're dysfunctional so very simple algorithm.

301

00:51:47.730 --> 00:52:05.250

Gerald H Pollack: That that follows from this is you got to do everything you can to make sure that your cells are filled with easy water is very simple, nothing, nothing complicated So how do you do that well, if you want, I mean I could I could go through a half dozen.

302

00:52:05.730 --> 00:52:08.340

Gerald H Pollack: Okay, so simplest one drink a lot of water.

303

00:52:08.550 --> 00:52:10.950

Gerald H Pollack: Because water is the raw material.

304

00:52:12.330 --> 00:52:13.680

Gerald H Pollack: for building easy water.

305

00:52:14.970 --> 00:52:17.040

Wade Lightheart: What does a lot of water constitute.

306

00:52:17.130 --> 00:52:20.490

Gerald H Pollack: I you know I I can't answer that question.

307

00:52:21.510 --> 00:52:25.140

Gerald H Pollack: People who people who deal with hydration.

308

00:52:26.400 --> 00:52:34.170

Gerald H Pollack: can better answer that question, you know I don't like to speculate on issues that I, for which we have no evidence, so I.

309

00:52:35.610 --> 00:52:38.220

Gerald H Pollack: I don't know I know that I don't drink enough.

310

00:52:40.260 --> 00:52:41.550

Gerald H Pollack: Water So here we go.

311

00:52:43.650 --> 00:52:43.800

Wade Lighheart: and

312

00:52:44.130 --> 00:52:45.240

Wade Lighheart: Almost every health.

313

00:52:45.330 --> 00:52:47.460

Wade Lighheart: advocate at suggest.

314

00:52:47.550 --> 00:52:56.790

Gerald H Pollack: drink why yeah stay hydrated but they don't understand exactly what being hydrated means and, for me, it means that every one of your sales is filled with easy water.

315

00:52:58.590 --> 00:52:59.160

Gerald H Pollack: So.

316

00:53:00.180 --> 00:53:08.880

Gerald H Pollack: Otherwise it doesn't function properly so that's the first, the second is to drink easy water now, how do you do that.

317

00:53:09.960 --> 00:53:22.680

Gerald H Pollack: Well, a simple way advocated by many people dealing natural health easy way to do it is, is to take go to your backyard take some plants freshly grown leaves.

318

00:53:23.460 --> 00:53:31.470

Gerald H Pollack: And crush them and their machines to do that squeeze out the water and drink that water, but what is that water that water is.

319

00:53:31.980 --> 00:53:39.300

Gerald H Pollack: Is is the stuff that's inside the plant cells, and these are these are fresh green leaves.

320

00:53:39.960 --> 00:53:50.070

Gerald H Pollack: And inside the plants, I was a full of easy water you're drinking basically drinking easy water may not taste great, but you can have something to it.

321

00:53:50.640 --> 00:54:02.610

Gerald H Pollack: And that's another way, so it bypasses this step of converting ordinary liquid water too easy water you're just drinking the easy water okay so that's excuse me.

322

00:54:08.610 --> 00:54:11.190

Gerald H Pollack: I think I need to drink some more easy water yeah.

323

00:54:16.140 --> 00:54:16.440

Gerald H Pollack: i'm.

324

00:54:17.790 --> 00:54:18.510

Gerald H Pollack: third way.

325

00:54:19.560 --> 00:54:21.570

Gerald H Pollack: Is is to go out in the sun.

326

00:54:23.760 --> 00:54:24.300

Gerald H Pollack: i'm sorry.

327

00:54:26.790 --> 00:54:32.070

Gerald H Pollack: Go out in the sun, so in Seattle, where I live, where do you live.

328

00:54:32.760 --> 00:54:34.230

Wade Lightheart: i'm in Venice beach California.

329

00:54:34.710 --> 00:54:35.730

Gerald H Pollack: You got a lot of sun.

330

00:54:36.000 --> 00:54:37.020

Wade Lightheart: got a lot of sun.

331

00:54:37.980 --> 00:54:43.950

Gerald H Pollack: Okay well i'm Seattle in the summertime we do it's very nice in the wintertime it's Gray outside.

332

00:54:44.310 --> 00:54:46.680

Wade Lightheart: Are you in coover or Canada, so I can.

333

00:54:46.680 --> 00:54:48.630

Gerald H Pollack: figure it out okay similar weather.

334

00:54:48.720 --> 00:55:00.450

Gerald H Pollack: yeah and people get a little gloomy after a few months of failing to see the sunshine sunshine, and you know the sun finally pokes through in between some clouds and everybody's happy.

335

00:55:01.560 --> 00:55:12.570

Gerald H Pollack: Now the usual interpretation of that is it some kind of psychological effect and it might it might be but there's another interpretation and in that other interpretation is is.

336

00:55:13.770 --> 00:55:17.760

Gerald H Pollack: The sun contains 50% of the sunlight is infrared energy.

337

00:55:20.160 --> 00:55:23.730

Gerald H Pollack: Roughly 50% that the warmth, that we feel from the sun.

338

00:55:25.080 --> 00:55:35.190

Gerald H Pollack: And so, if our head is absorbing infrared energy means that all the nerve cells that are sitting in our brain.

339

00:55:36.390 --> 00:55:56.550

Gerald H Pollack: are getting filled with easy water, you see, and and then we're being returned to our natural state which is feeling good instead of feeling depressed You see, and so it could be simple, a fourth one is a variation on that going to a sauna or as as the fence a sauna.

340

00:55:57.840 --> 00:56:10.830

Gerald H Pollack: granted it, so I guess they have it right or in Russia, but Banja basically so what's that well you know it could be its heat and it could be dry heat or moist heat, but its heat.

341

00:56:11.460 --> 00:56:23.520

Gerald H Pollack: and heat it contains basically infrared energy and and so, if you go into the sauna take off your clothing, especially so everything penetrates really well you're exposing your entire body.

342

00:56:24.480 --> 00:56:44.670

Gerald H Pollack: To to infrared energy and that infrared energy builds easy water throughout your body, and you know if you go in with an ache and pain, it could be that it gets resolved, because in in the target oregon's for that that that pain easy water is built in and you're repairing.

343

00:56:46.410 --> 00:56:47.640

Gerald H Pollack: You see, and that's why am.

344

00:56:48.720 --> 00:56:56.310

Gerald H Pollack: I remember, I remember my own experience it wasn't in Finland, and I, I was suffering terrible jet lag and I just given a talk and.

345

00:56:56.670 --> 00:57:09.360

Gerald H Pollack: And so we're going to have a party tonight, so we go to the party, it was a nice meal and about 930 10pm i'm waiting to get into the bus to go back so I can go to sleep.

346

00:57:10.590 --> 00:57:21.210

Gerald H Pollack: You know, after being jet lagged and terribly fatigued and the guy gets of the microphone the leader of the Conference, and he says okay it's now time to go to the sauna.

347

00:57:21.960 --> 00:57:25.770

Gerald H Pollack: Right oh shit it's, the last thing that I really want this.

348

00:57:26.880 --> 00:57:38.400

Gerald H Pollack: But I went and and after 20 minutes in there and a shower I felt like was morning like I had eight hours sleep and I was raring to go and.

349

00:57:38.790 --> 00:58:01.020

Gerald H Pollack: So I think a lot of people experienced this and I think the bottom line is very simple you're the heat provides infrared energy infrared energy builds easy water and as a result of that you feel better okay another one is various substances that you can ingest.

350

00:58:02.760 --> 00:58:04.140

Gerald H Pollack: And, and this starts.

351

00:58:05.190 --> 00:58:17.250

Gerald H Pollack: Back in ayurvedic times, where people began to learn that certain herbs or spices, or whatever, a good for house and I guess the most famous one maybe it's turmeric.

352

00:58:19.800 --> 00:58:21.000

Gerald H Pollack: coconut oil.

353

00:58:22.860 --> 00:58:32.550

Gerald H Pollack: there's basil and and a whole bunch of others D is another and we tested all of those and more and the hypothesis was that.

354

00:58:33.180 --> 00:58:42.960

Gerald H Pollack: Was that the reason, these are so effective, you know in Modern Medicine discounts, the effectiveness, but others have noted the effectiveness of these.



355

00:58:43.620 --> 00:59:05.100

Gerald H Pollack: hypothesis was was that maybe these substances, increase the amount of easy water and we started it and we found indeed exactly that was the case that they all of them build easy water expanded easy water, so it means that you know in moderate amounts if you eat these substances.

356

00:59:06.630 --> 00:59:13.890

Gerald H Pollack: There should improve your health, as has been well documented throughout the ages, although discounted now.

357

00:59:15.000 --> 00:59:24.750

Gerald H Pollack: Because they build easy water that's the hypothesis, based on the results, by the way, side effect, we tried to as a control, we tried to use a poison.

358

00:59:26.010 --> 00:59:36.210

Gerald H Pollack: To see if poison, you know, maybe also builds it easy water, we hope that the poison would diminish easy water and we tried life as a you know they.

359

00:59:36.690 --> 00:59:39.660

Gerald H Pollack: are a healer and maybe people killer.

360

00:59:41.730 --> 00:59:48.480

Gerald H Pollack: And we found that at no concentration that build easy water, all I did was diminish the amount of easy water.

361

00:59:49.560 --> 00:59:50.160

Wade Lighheart: wow.

362

00:59:50.250 --> 01:00:00.750

Gerald H Pollack: So it might be, it might be that that the effective known the facts of life is that are mediated through a destruction of easy water, you see.

363

01:00:01.080 --> 01:00:02.700

Wade Lighheart: So as as it says a.

364

01:00:02.850 --> 01:00:19.830

Wade Lighthead: quick question on that would that mean someone's potential resistance to aforementioned toxins might be determined by the available amount of easy water, they were able to produce or possess in possession of.

365

01:00:20.250 --> 01:00:27.000

Gerald H Pollack: yeah I mean Are you suggesting that there could be an antidote based on the build up of easy water is that what you're could be.

366

01:00:27.060 --> 01:00:32.190

Wade Lighthead: yeah, we will have some people who are more resistant to toxic chemicals and other people.

367

01:00:32.580 --> 01:00:41.130

Gerald H Pollack: But they could well be I I not thought about that it's an interesting idea yeah certainly worth worth studying it's very interesting.

368

01:00:42.330 --> 01:00:44.460

Gerald H Pollack: Okay, so I presented five This is one more.

369

01:00:46.050 --> 01:00:48.750

Gerald H Pollack: And that is earthing or grounding.

370

01:00:49.200 --> 01:00:53.280

Gerald H Pollack: Right, I know you're familiar with it, I don't know how much your listeners are.

371

01:00:54.720 --> 01:00:57.660

Wade Lighthead: actually do every one of these practices that you've outlined.

372

01:00:57.930 --> 01:00:59.820

Gerald H Pollack: It doesn't surprise me one bit that's.

373

01:01:00.330 --> 01:01:00.720

Nothing.

374

01:01:02.280 --> 01:01:03.270

Gerald H Pollack: i'm trying to give you.

375

01:01:03.720 --> 01:01:12.060

Gerald H Pollack: yep at least from our point of view mechanism mechanism downing of why they work and it's all based on one simple thing they all build easy water.

376

01:01:12.390 --> 01:01:15.780

Wade Lighheart: wow which is remarkable because one of the things that i've used.

377

01:01:16.290 --> 01:01:27.510

Wade Lighheart: In what I would call objective observation in my own life is there's a sense of does something make me feel good or do something make me.

378

01:01:28.110 --> 01:01:33.030

Wade Lighheart: Bad do it does that do I feel an increase supportive energy my life, where do I feel a decrease.

379

01:01:33.600 --> 01:01:42.660

Wade Lighheart: And through a process of elimination I go well you know if I go into the sunshine and walk around in the fresh air I feel really good if I go to the beach put my.

380

01:01:43.350 --> 01:01:52.140

Wade Lighheart: bare feet on the ground, I feel good if I get up in the morning and I get into the infrared sauna I noticed that I feel more energized than if I don't.

381

01:01:52.590 --> 01:02:11.730

Wade Lighheart: I noticed my level of consumption of water determines how much energy and vitality, I feel I use all of those agents that you outlined as far as are you Vedic medicines i'd studied, are you Vedic and have known positive effects from all of them in my my own life and so to me.

382

01:02:14.250 --> 01:02:27.360

Wade Lighheart: The practical application is the first observational component of science, but what is the outcome, now the mechanism comes in the research and study and then you can extrapolate from that and

which is where your expertise comes into.

383

01:02:27.600 --> 01:02:38.250

Gerald H Pollack: Well yeah I mean what one in science one likes to understand the mechanisms underlying what you what you observe that's what science should be all about rather than.

384

01:02:39.180 --> 01:02:45.600

Gerald H Pollack: You know the current trend and science to discount some of these observations that are.

385

01:02:46.170 --> 01:02:59.400

Gerald H Pollack: Even 5000 years old, because Oh, you know we're doing modern medicine, now we don't need to go back to the traditional concepts of that from India and China, and whatever and you know, for me, this is a real mistake.

386

01:03:00.660 --> 01:03:10.230

Gerald H Pollack: So just let me tell you the number six you said walking on the beach barefoot next feel good, and this is what i'm talking about the question is why.

387

01:03:10.890 --> 01:03:22.020

Gerald H Pollack: it's become almost an industry, right now, a lot of people are taking advantage of this and companies are selling various pieces of apparatus, that you can use to facilitate that.

388

01:03:23.730 --> 01:03:39.840

Gerald H Pollack: yeah, and so it starts it starts with and i'm going to tell you that I think this is the same it's the build up of easy water, but why so one one feature of the earth that you probably know about, but I didn't.

389

01:03:41.700 --> 01:03:47.580

Gerald H Pollack: Until fairly fairly recently, and that is that the earth has a net negative charge and.

390

01:03:49.380 --> 01:03:53.280

Gerald H Pollack: I was blown over when someone told me, it was a.

391

01:03:55.140 --> 01:03:59.310

Gerald H Pollack: It was a Russian guy who is working in my lab and he's as he was.

392

01:04:00.660 --> 01:04:07.350

Gerald H Pollack: As he was departing going back to Russia, after having spent six months in my lab he started talking about the.

393

01:04:08.550 --> 01:04:15.360

Gerald H Pollack: Electric field of the earth, and I said to him Andre you don't mean electric field you mean magnetic field right.

394

01:04:15.660 --> 01:04:25.410

Gerald H Pollack: there's, no, no, I mean electric field, I said look I started electrical engineering as an undergraduate no Professor ever told me that there was an electric field around the earth.

395

01:04:26.010 --> 01:04:36.330

Gerald H Pollack: And, and that the earth itself was negative and the ionosphere up there is positive, so you get an electric field, running from the positive to the negative perpendicular to the surface of the earth.

396

01:04:37.440 --> 01:04:44.280

Gerald H Pollack: You said I don't know what's going on with you, but in Russia every middle school student knows that the earth is negatively charged.

397

01:04:45.180 --> 01:04:53.430

Gerald H Pollack: So I was embarrassed humiliated by thinking this guy's got it wrong he can't can't be next morning we were talking about fineman.

398

01:04:53.940 --> 01:05:12.540

Gerald H Pollack: So one of my students brought fireman's lectures volume to Chapter nine a whole chapter is about evidence for the negative charge of the earth so having seen that you know I I came to realize that well, maybe it's really, really true and.

399

01:05:14.010 --> 01:05:25.650

Gerald H Pollack: If it's true and there's an electric fields, this is this is centrally important for all of nature, so so critically important that people are not really paying whole lot of attention to

it is the American.

400

01:05:26.070 --> 01:05:36.690

Gerald H Pollack: educational system is a bit deficient because middle school students here i've never heard such a thing as an electric field or negatively charged earth the Earth is just a you know big rock.

401

01:05:38.340 --> 01:05:47.520

Gerald H Pollack: Anyway, so there we are so what that what does that mean well if you are barefoot walking on the beach you're connected electrically.

402

01:05:48.690 --> 01:05:56.760

Gerald H Pollack: To the earth's negative charge and if you're near the water it's better because the the sand is moist over there.

403

01:05:57.030 --> 01:06:04.800

Gerald H Pollack: Is a good conductor, so it means that this negative charge that's embedded beneath you is going to be transferred from you do your feet.

404

01:06:05.400 --> 01:06:20.190

Gerald H Pollack: And what does it do well, we found in the laboratory if we add negative charge and builds easy easy itself has negative charge, so you can imagine we start with water and we put negative charge in the water gets converted to easy water, so it means if you're walking on the beach.

405

01:06:21.480 --> 01:06:27.780

Gerald H Pollack: Any sales that you have in your body that are deficient in negatively charged easy water.

406

01:06:28.320 --> 01:06:34.500

Gerald H Pollack: will be replenished by simply by walking on the beach or by immersing yourself in a mud bath or you know any of the.

407

01:06:34.950 --> 01:06:53.490

Gerald H Pollack: Different expedience that people use to connect themselves to the earth so so that's the the sixth one and I i'm convinced that the mechanism is just the same as all of the others that they build easy water it's as simple as that, and you must have

easy water to be in good health.

408

01:06:54.630 --> 01:07:09.060

Gerald H Pollack: that's why some of us who are a bit long in the tooth you know we get wrinkles because we're dehydrated and we got to drink a lot to compensate for all of that, and I wish I could learn that lesson myself.

409

01:07:12.000 --> 01:07:12.810

Wade Lighthead: I remember.

410

01:07:14.130 --> 01:07:18.300

Wade Lighthead: asking you a question at the bulletproof conference years ago and it was a.

411

01:07:19.500 --> 01:07:32.370

Wade Lighthead: water to drink and your quick answer was well i'm not sure, no, no, that was a very humility, but one thing we can say is drink more okay so let's take.

412

01:07:33.300 --> 01:07:54.000

Wade Lighthead: What you've suggested here in, and if we can summarize here there's a fourth phase of water that produces this quote unquote easy water that you've identified this water is developed because of a polarity that is generated through heat sources, it would appear or infrared sources particular.

413

01:07:54.060 --> 01:07:55.770

Gerald H Pollack: yeah that's where the energy function.

414

01:07:56.040 --> 01:08:03.150

Wade Lighthead: And then, by exposing yourself to these forces, we have the potential to increase the electrical energy would that be the flow.

415

01:08:03.390 --> 01:08:04.110

Gerald H Pollack: yeah yeah.

416

01:08:04.680 --> 01:08:16.590

Wade Lighthead: And then that electrical energy is an organizing principle which can be advocate the functioning of a variety of

aspects of our body and in a healthy way would that be the same.

417

01:08:16.590 --> 01:08:23.730

Gerald H Pollack: Absolutely absolutely yeah It may be a necessary condition, but it's certainly a condition yeah.

418

01:08:23.970 --> 01:08:27.480

Wade Lighheart: and possibly extreme.

419

01:08:28.950 --> 01:08:46.020

Wade Lighheart: Cases of people who aren't eating for extensive periods of time are actually demonstrating the that you could actually function without consumption of food, if you contain sufficient amounts of easy water would that be the purported.

420

01:08:46.710 --> 01:08:48.360

Gerald H Pollack: that's hypothesis right.

421

01:08:50.460 --> 01:08:50.790

Wade Lighheart: So.

422

01:08:51.150 --> 01:09:05.190

Wade Lighheart: So where do you think we can we'll be able to move from this into the holistic health benefits are the benefits to the human organism if we understood this, say, for example, when you go to a hospital.

423

01:09:05.790 --> 01:09:17.220

Wade Lighheart: What if what if we could accelerate recovery if we put people in saunas or we put them we rolled them out in the sun set of these buildings or or or let them put their feet on the ground.

424

01:09:17.640 --> 01:09:27.240

Wade Lighheart: For an hour a day or something, do you think or has there been studies that have demonstrated, you can accelerate the the recovery times of.

425

01:09:29.070 --> 01:09:31.500

Wade Lighheart: People who are suffering from Malays.

426



01:09:32.130 --> 01:09:37.110

Gerald H Pollack: I I don't know specific studies that.

427

01:09:38.820 --> 01:09:46.380

Gerald H Pollack: In in which those those questions are investigated I wouldn't be surprised if some people are doing those studies, because.

428

01:09:47.220 --> 01:09:54.930

Gerald H Pollack: You know the idea right now that holistic medicine, such as becoming more mainstream, year by year, and more people.

429

01:09:55.650 --> 01:10:07.170

Gerald H Pollack: While they're voting with their feet, they had negative experiences with conventional medicine, you know we've done everything we can do we don't know what else do they have bounds and.

430

01:10:08.520 --> 01:10:26.340

Gerald H Pollack: under which they work, and if they deviate go outside of those bounds a it's a career issue they could get sued they could get thrown out, they need to stick to yeah so but, but the the either the natural path or the holistic.

431

01:10:28.680 --> 01:10:31.650

Gerald H Pollack: Care of your health care people.

432

01:10:32.790 --> 01:10:41.160

Gerald H Pollack: are not restricted by that and I think most of them are have the understanding about the the ancient wisdom is very important here, because.

433

01:10:41.640 --> 01:10:53.850

Gerald H Pollack: These people were also interested in good health, they didn't have the modern technologies that we had but they had similar maybe even better brains and we haven't figured things out because everybody wanted to remain healthy.

434

01:10:54.990 --> 01:11:05.130

Gerald H Pollack: So, so I you know I can't answer your question, because I, I guess, I haven't checked the literature on that, but I think it's coming it's it's becoming clear the air.

435

01:11:07.230 --> 01:11:07.650

Gerald H Pollack: So when.

436

01:11:07.680 --> 01:11:12.630

Wade Lighheart: We use the application or where is your research taking you here in the future, like what.

437

01:11:13.020 --> 01:11:14.310

Gerald H Pollack: Any were.

438

01:11:15.330 --> 01:11:18.960

Gerald H Pollack: In many areas that even that go a little bit beyond.

439

01:11:20.100 --> 01:11:30.330

Gerald H Pollack: What we've been talking about, I have two books in the works and one of them, one of them deals with the role of electrical charge in nature and.

440

01:11:31.530 --> 01:11:37.230

Gerald H Pollack: surprising role, I should say and i'm I argue in in this book.

441

01:11:38.580 --> 01:11:55.740

Gerald H Pollack: And this book that many of the features that we really don't understand very well can be understood, if we if we take into account the electrical charge that is is existing in the particular system and idea with a whole bunch of topics.

442

01:11:57.300 --> 01:12:02.760

Gerald H Pollack: So what what creates wind, what makes the earth spin on its axis.

443

01:12:04.650 --> 01:12:14.940

Gerald H Pollack: How do you get weather what what's the idea how to how do you generate a hurricane and those features that you can see from up above.

444

01:12:16.230 --> 01:12:24.690

Gerald H Pollack: what's the real nature of gravitation how do birds fly, how do, how do fish swim.

445

01:12:26.400 --> 01:12:36.900

Gerald H Pollack: How does, how can some sailboats not the ones where you live, but the ones up North that that sale and ice, how can they actually go almost directly into the wind.

446

01:12:38.370 --> 01:12:51.330

Gerald H Pollack: You know the wind is pushing this way but you're moving that way, etc, and I so so i'm mentioning this because because somebody experiments in the lab when we have time to address.

447

01:12:52.410 --> 01:12:53.550

Gerald H Pollack: Those issues.

448

01:12:54.720 --> 01:12:55.500

Gerald H Pollack: And and.

449

01:12:56.520 --> 01:13:11.070

Gerald H Pollack: And then, a book after that is is about the structure of the atom and I think the structure that we have learned and understood is is wrong, and you know I can tell you that in a moment, why am.

450

01:13:12.270 --> 01:13:14.550

Gerald H Pollack: is deviating slightly from your question but.

451

01:13:15.120 --> 01:13:15.420

Wade Lighheart: I love.

452

01:13:16.800 --> 01:13:33.600

Gerald H Pollack: Okay, so we learned the structure of the atom and you know, although the original solar system model has been augmented with quantum mechanical concepts still you know we have a nucleus with positive charge and we've got electron shells.

453

01:13:35.310 --> 01:13:43.290

Gerald H Pollack: With negative charge and and you know so think about it for a moment think about think that I think of middle school okay.

454

01:13:43.830 --> 01:13:57.810

Gerald H Pollack: first thing is that you learn in middle school that

plus charges repel each other right and the nucleus is filled with plus charges very close together the repulsive force is huge, how come the nucleus doesn't blow up.

455

01:13:58.440 --> 01:13:58.860

Wade Lightheart: mm hmm.

456

01:13:59.280 --> 01:14:05.640

Gerald H Pollack: So the physicists have addressed that particular question by inventing something called quote the strong force.

457

01:14:06.180 --> 01:14:11.610

Gerald H Pollack: And the strong for us is sort of like a band aid meant to cover a gaping wound, you know it doesn't.

458

01:14:12.120 --> 01:14:23.700

Gerald H Pollack: The theory doesn't work, but we need something because, because we know we know quote unquote that the model is right, therefore, we need something to make sure that it's all well preserved sounds one second.

459

01:14:24.810 --> 01:14:31.080

Gerald H Pollack: You and I learned, maybe in middle school that plus and minus charge attract each other right.

460

01:14:32.280 --> 01:14:38.730

Gerald H Pollack: So the electrons are negative and the nucleus is positive, so how come the atom doesn't collapse into nothing.

461

01:14:42.240 --> 01:14:43.770

Gerald H Pollack: I don't think you have an answer to that one.

462

01:14:44.580 --> 01:14:44.940

Gerald H Pollack: yeah.

463

01:14:45.240 --> 01:14:50.730

Gerald H Pollack: yeah I mean if something is fundamentally wrong it's as simple as that, and so.

464

01:14:52.290 --> 01:15:08.010

Gerald H Pollack: And you know most elements on the periodic table are solid at room temperature, so it means that you got two atoms they need to stick together, somehow, otherwise you can't get a solid so think about two atoms.

465

01:15:09.480 --> 01:15:22.860

Gerald H Pollack: Can they can be any any material and the outer Shell is negatively charged and the second item the outer Shell is negatively charged and try to bring them together to join one another.

466

01:15:24.780 --> 01:15:25.680

Gerald H Pollack: They shouldn't join.

467

01:15:27.030 --> 01:15:27.480

Gerald H Pollack: Right.

468

01:15:27.930 --> 01:15:28.230

Gerald H Pollack: and

469

01:15:28.560 --> 01:15:32.820

Gerald H Pollack: You know, there is a again another argument talking about to the.

470

01:15:34.650 --> 01:15:41.070

Gerald H Pollack: sharing of electrons and I could never understand why that solves the problem but anyway it's good for it so.

471

01:15:42.840 --> 01:15:44.250

Gerald H Pollack: And then another.

472

01:15:45.780 --> 01:15:48.270

Gerald H Pollack: problem you got an electron.

473

01:15:52.110 --> 01:15:52.620

Gerald H Pollack: i'm sorry.

474

01:15:53.790 --> 01:15:56.310

Gerald H Pollack: You have an electrode coming zipping in from outside.

475

01:15:58.860 --> 01:16:05.940

Gerald H Pollack: Where does it where does it stop where does it man, how does it know that a particular Shell is not full or full.

476

01:16:08.100 --> 01:16:10.230

Gerald H Pollack: Why, why does it not lodge.

477

01:16:14.430 --> 01:16:19.230

Gerald H Pollack: i'm sorry, why is it not a large in between two shells, etc, etc, so.

478

01:16:20.310 --> 01:16:26.100

Gerald H Pollack: Again you're a handful of reasons, and these are like middle middle school concepts.

479

01:16:27.420 --> 01:16:27.870

Gerald H Pollack: About.

480

01:16:29.100 --> 01:16:30.810

Gerald H Pollack: Why it doesn't make sense, so.

481

01:16:34.290 --> 01:16:34.920

Gerald H Pollack: quantum.

482

01:16:39.840 --> 01:16:47.220

Gerald H Pollack: quantum mechanical people would say how it all works out, and you know quantum mechanics is abstract mathematics.

483

01:16:48.570 --> 01:16:53.640

Gerald H Pollack: And, and the the comment is oh charges don't matter at the atomic level.

484

01:16:55.170 --> 01:16:59.940

Gerald H Pollack: Okay, so charges don't matter at the atomic level when do they begin to matter.

485

01:17:00.630 --> 01:17:01.290

Gerald H Pollack: We know.

486

01:17:02.580 --> 01:17:16.290

Gerald H Pollack: We know that the charges in molecules form a central part of chemistry, so they matter when a few of those atoms get together where's the boundary between the two when they don't count it all, and they count fully.

487

01:17:17.910 --> 01:17:35.940

Gerald H Pollack: You know it doesn't it doesn't make logical sense so anyway, I think the the model is is drawn and in the book, I will be proposing an alternative model, which I think is simpler and I guess probably best I don't go into that at the moment because.

488

01:17:38.550 --> 01:17:47.040

Gerald H Pollack: I i'm not going to be able to argue successfully without a lot of information, but i'll just say one thing and.

489

01:17:48.300 --> 01:17:57.870

Gerald H Pollack: The model that I come up with is not very different from a model that was suggested by the chemists the famous chemist of the era.

490

01:17:58.320 --> 01:18:14.400

Gerald H Pollack: When the physicist Niels bohr and and others came up with the solar system model, they said this model doesn't work at all, it doesn't explain the simplest of chemical reactions and so GM Lewis, who was at the time, one of the premier chemist.

491

01:18:15.660 --> 01:18:16.470

Gerald H Pollack: came up with a.

492

01:18:17.850 --> 01:18:28.710

Gerald H Pollack: model where atoms are mainly cubes and and I didn't hadn't known about that and I came up with a model that is rather similar to that, so I feel.

493

01:18:29.820 --> 01:18:39.510

Gerald H Pollack: I feel buoyed and in my enthusiasm for it, based on the fact that it's not so different from what the chemist suggested 100 years ago.

494

01:18:40.230 --> 01:18:48.360

Gerald H Pollack: doesn't mean it's right, but at least maybe so anyway, you asked your original question is, what are we doing in the lab and I deviated because.

495

01:18:48.660 --> 01:19:02.430

Gerald H Pollack: I wanted to tell you that some of these concepts that i've been thinking about, and that will come out as soon as I can get my son the artist to get working on a few more illustrations he's busy remodeling his home and.

496

01:19:04.170 --> 01:19:21.450

Gerald H Pollack: And the first of the two books should, I hope, be out in six or eight months and the other one maybe not long after that and i'm so excited about about that, but but but that did experiments so some of the experiments are oriented that way, but I wanted to say that we're we're now.

497

01:19:22.650 --> 01:19:30.270

Gerald H Pollack: deeply involved in a whole bunch of experiments, one of which is is looking at that subtle energy that we're we're talking about so.

498

01:19:31.020 --> 01:19:49.230

Gerald H Pollack: We got three different experiments going and and the objective is to see when without subtle energy reaches water does it change the physical structure of the water that's hypothesis, and so in one experiment Just to give you an idea we have a container of water sitting in the laboratory.

499

01:19:50.250 --> 01:19:59.880

Gerald H Pollack: it's kind of an isolated room without too much interference and we invite a healer someone who is notably successful at healing through intention.

500

01:20:00.930 --> 01:20:14.760

Gerald H Pollack: And he focuses he or she focuses their intention on the water and we measure the water before their attention and after their intention to see if there's a change, we have no no results yet we're just getting into those.

501

01:20:15.270 --> 01:20:23.910

Gerald H Pollack: experiments and we have five different methods to look at the physical structure of water, and you know we're hopeful



that one or two of those five methods will.

502

01:20:24.540 --> 01:20:31.590

Gerald H Pollack: will have revealed some some change and so So these are you know experiments that were.

503

01:20:32.580 --> 01:20:47.400

Gerald H Pollack: Getting to do and we're really excited about and also we're going to get into remote healing so some of the healers claim that they can send out healing energy from anywhere and it gets to where they want it to go.

504

01:20:48.450 --> 01:20:59.910

Gerald H Pollack: i've had it myself I wrench my back some some months ago and I unfortunate unfortunate that Mr Shaw, I don't know if you know him has been treating me.

505

01:21:01.140 --> 01:21:12.690

Gerald H Pollack: With his his methods my back is okay I can't profess that it's because of the Chinese remote healing or maybe time or whatever, but it may well be so.

506

01:21:12.990 --> 01:21:15.300

Wade Lighheart: Anyway, experience of remote healing.

507

01:21:16.410 --> 01:21:16.680

Gerald H Pollack: You know.

508

01:21:16.980 --> 01:21:36.660

Wade Lighheart: A woman who is a she's she's a very interesting scientists herself yet has these capabilities and she goes I i've been troubled by these capabilities, because i'm not able to demonstrate why they work but appreciating to I also simultaneously, which were torturous at the moment.

509

01:21:36.690 --> 01:21:37.350

Gerald H Pollack: And oh.

510

01:21:37.530 --> 01:21:56.100

Wade Lighheart: She instructed me to go lie down in a room and relax and she would work on me and within a few minutes, the excruciating

pain, which was torturing me for well over 24 hours was completely eliminated, and I was just like flabbergasted by it.

511

01:21:56.520 --> 01:21:57.240

Gerald H Pollack: wow.

512

01:21:57.300 --> 01:22:03.750

Wade Lighheart: And so I, so I have experienced that and we've actually seen evidence of that in meditation groups impacting.

513

01:22:04.410 --> 01:22:21.780

Wade Lighheart: criminality, it was one of the more famous experiments that they these this group actually goes down and produces this so there, there are keep up their ways of generating fields or interactions within our chemistry that are not identifiable by the current.

514

01:22:23.130 --> 01:22:32.520

Wade Lighheart: Say paradigms of science, that are advocated in our education institutions, and so I guess My final question would be again, thank you, by the way, for bringing that.

515

01:22:33.630 --> 01:22:44.130

Wade Lighheart: eloquence around chemistry because uh when I was taking my grade 10 chemistry and we were learning this at university at school, I continually challenged my.

516

01:22:44.640 --> 01:22:57.750

Wade Lighheart: Professor at the time or my school teacher, because I always like to you know a lot of this stuff doesn't make sense to me like i'm not sure how this thing works out if I had some of the same questions around atomic structure and and and these things and.

517

01:22:59.340 --> 01:23:01.830

Wade Lighheart: I periodically got thrown out of class most.

518

01:23:01.830 --> 01:23:14.460

Wade Lighheart: Days throwing my questions and and now to hear you discuss these things and give insight to what could be potentially going on there i'm very excited and it's it's i'm.

519

01:23:14.880 --> 01:23:25.890

Wade Lighthead: thoroughly invigorated by the idea that my grade 10 self might be able to go track down my old professor at some point, after reading one of your new books and saying hey remember when you were throwing me at a class.

520

01:23:25.890 --> 01:23:27.840

Wade Lighthead: And so.

521

01:23:28.950 --> 01:23:32.580

Wade Lighthead: For those in for those who are.

522

01:23:35.610 --> 01:23:38.880

Wade Lighthead: Following their hunters following their intellectual.

523

01:23:40.050 --> 01:23:44.370

Wade Lighthead: What might not become and do you have any suggestions, because you know you're obviously.

524

01:23:45.480 --> 01:23:55.500

Wade Lighthead: swimming upstream from a very strong downstream current in science yep what have you been able to determine by that kind of.

525

01:23:56.970 --> 01:24:02.550

Wade Lighthead: That process and what you've learned over the course of your of your life as a researcher and, as a scientist.

526

01:24:02.910 --> 01:24:04.080

Wade Lighthead: And sometimes falling through.

527

01:24:04.080 --> 01:24:06.300

Gerald H Pollack: Why i've learned.

528

01:24:07.290 --> 01:24:08.220

Gerald H Pollack: i've learned that.

529

01:24:10.350 --> 01:24:13.290

Gerald H Pollack: philosophy and the philosophy is that.

530

01:24:14.670 --> 01:24:25.590

Gerald H Pollack: Items razor really works that nature Mother Nature operates simply and if there's a mechanism that you read about in the textbook and you're scratching your head trying to understand that.

531

01:24:26.250 --> 01:24:36.810

Gerald H Pollack: There is some possibility that your lack of understanding sense stems from your limited number of brain cells, but there's a better chance that is wrong.

532

01:24:39.900 --> 01:24:46.740

Gerald H Pollack: Well, it does that's what i've come to, and you know it may sound, arrogant, but I gotta tell you that that.

533

01:24:47.310 --> 01:24:57.540

Gerald H Pollack: In my experience in in several different fields I found that it's exactly like that that that a mechanism that looks as though it's really complicated.

534

01:24:58.290 --> 01:25:08.250

Gerald H Pollack: shouldn't be complicated because Mother Nature works on a simple simple principles, of course, it may be intricate because our control issues and whatever, but the essential.

535

01:25:08.880 --> 01:25:18.330

Gerald H Pollack: essential principle is got to be simple So then, when I read a book i'm a science book, for example, and I I I hear.

536

01:25:19.140 --> 01:25:30.480

Gerald H Pollack: About a mechanism, you know it doesn't have the ring of truth, if it's complicated and if there are various steps that they can explain and they jump over quickly over those steps.

537

01:25:31.290 --> 01:25:43.410

Gerald H Pollack: It doesn't do it for me and and that's where I start to say well i'm not so sure that this mechanism is is correct, and you know you'll build from if you build from a weak foundation.

538

01:25:45.120 --> 01:25:46.080

Gerald H Pollack: and build an edifice.

539

01:25:47.370 --> 01:25:56.100

Gerald H Pollack: you're going to have to hold it together with chewing gum and strings and and all it's it's not everything becomes complicated if you start with the wrong.

540

01:25:57.300 --> 01:25:59.250

Gerald H Pollack: essential idea wrong principle.

541

01:25:59.850 --> 01:26:03.180

Gerald H Pollack: The principle is got to be simple and I may be wrong on that, but.

542

01:26:03.540 --> 01:26:17.460

Gerald H Pollack: This is what i've learned many years of doing science at don't think that it's your own limitation, although it could be, and your failure to really comprehend what the textbook says it might be the textbook is wrong.

543

01:26:18.180 --> 01:26:24.540

Wade Lighheart: I love it where can people find your books your information follow what your researches and.

544

01:26:24.900 --> 01:26:27.450

Gerald H Pollack: Well, the usual place well Amazon.

545

01:26:28.590 --> 01:26:29.430

Gerald H Pollack: Is is.

546

01:26:30.510 --> 01:26:40.320

Gerald H Pollack: Probably the simplest place, and you know we tried to I must interject we tried to keep the price of the books reasonable.

547

01:26:41.370 --> 01:26:46.140

Gerald H Pollack: Because my interest is not to make money that's my interest is is.

548

01:26:47.730 --> 01:26:56.970

Gerald H Pollack: To communicate ideas and so, so I think anybody will find that the the books that we've been talking about the fourth

phase.

549

01:26:57.660 --> 01:27:07.680

Gerald H Pollack: of water, which is, I guess, the first one i'd recommend, but you you like sales sales and the engines of life and I like that one too, so the two of them together the sales and jails deals.

550

01:27:08.340 --> 01:27:21.660

Gerald H Pollack: With particularly with biology and and the role of structured water and the fourth phase deals with so called structured water but we call it something different now and.

551

01:27:22.440 --> 01:27:31.980

Gerald H Pollack: and its application, not only in biology, but beyond biology, this is a universal kind of thing so so I recommend that and also.

552

01:27:32.580 --> 01:27:47.340

Gerald H Pollack: My website of our laboratory I don't have it offhand but it's it's easy to find if you just look under my name pollock laboratory website, or something like this it's easy to find and it's got a lot of information, including.

553

01:27:48.630 --> 01:27:57.300

Gerald H Pollack: Published papers that we've been dealing with and it a little idea, the flavor of the laboratory which is a kind of fun place to be.

554

01:27:57.990 --> 01:28:01.320

Gerald H Pollack: So those are as what I I recommend and also there are.

555

01:28:01.470 --> 01:28:02.220

There are many.

556

01:28:03.450 --> 01:28:08.340

Gerald H Pollack: youtube's and such of interviews and if.

557

01:28:10.470 --> 01:28:17.760

Gerald H Pollack: Anybody could just look under my name and find many

of them over roughly the past 10 years or so.

558

01:28:19.380 --> 01:28:27.120

Wade Lighthead: Thank you so much for your time really appreciate it we'll put all the show notes and links inside the show notes for our listeners.

559

01:28:27.750 --> 01:28:34.800

Wade Lighthead: You are speaking to a true renegade scientists someone who's doing some foundational work which has very practical implications.

560

01:28:35.250 --> 01:28:43.860

Wade Lighthead: Your health your vitality, want to thank you for joining us today and for all those who are listening, you can smash that like button share it with your friends and inquiring send us your questions.

561

01:28:44.160 --> 01:28:51.270

Wade Lighthead: You might have I highly recommend reading cells, gels and the engine and life in the fourth phase of water and following along.

562

01:28:52.620 --> 01:29:03.360

Wade Lighthead: with Dr pollock's work and what they are coming out with I think decades from now you'll be well revered for turning paradigms that we think.

563

01:29:04.020 --> 01:29:14.520

Wade Lighthead: Or have built the foundations of our biological science on and up upsetting those, and so I appreciate you taking the time to come on here today, I love it and we're delighted to have you.

564

01:29:14.760 --> 01:29:20.310

Gerald H Pollack: Well, thank you for your kind words i'll be looking from up above to see if what you say, actually bears fruit.

565

01:29:22.980 --> 01:29:23.580

Wade Lighthead: As we all.

566

01:29:24.720 --> 01:29:25.920

Wade Lightheart: joining us today take care.

567

01:29:26.190 --> 01:29:29.160

Gerald H Pollack: Thank you, my pleasure okay i'll see you.

568

01:29:30.360 --> 01:29:30.810

Gerald H Pollack: Okay.