

TIMELY STUDIES IN CESIUM AND STRONTIUM

DR. ELIZABETH WRIGHT HUBBARD, M.D.

What remedies should be stressed for modern Homœopathy?

Those especially timely and in the public eye and print: where we can contribute our new slant and give new insight and working information to our scientific colleagues both in medicine and pure science. Scientists and laymen alike are concerned and rightly with "fall-out," its effects on human health now and later and on our descendants. What medicines can help its victims or, better still, protect them? What precautions can we take and by what means lessen the menace?

The main dangerous elements in atomic fall-out are Strontium,⁹⁰ Carbon,⁶⁰ Cesium¹³⁷ and Beryllium. The Atomic Energy Commission lists nine (9) hazard factors of these radio-isotopes:

1. Quantities available
2. Initial body retention
3. Fractions going from the blood to critical body tissues
4. Radiosensitivity of tissue (lungs)
5. Size of critical organ
6. Essentiality of the critical organ to the proper function of the body
7. Biological half-life
8. Radio-active half-lives of *intermediate* length
9. Energy of radiation produced by the radio-isotope.

What is the relationship, actual or potential, of Homœopathy to these four elements and their isotopes?

Carbon is thought *not* to be an *immediate* menace: it will affect the genes, and be a peril to future generations. Our materia medica is acquainted through provings and clinical usage with several forms of Carbon: notably *Adamas*—the diamond, pure carbon; and *Graphites*—plumbago; *Petroleum*—rock oil, the fossilized vegetable product; *Carbo animalis*—the animal carbon from charred ox-hides; and *Carbo vegetabilis*—

charcoal, the vegetable form. Should we give the most similar of these to people within the radius of extreme fall-out action as a prophylactic, as a corrective for the latent damage to the genes?

Beryllium has been partially proven, notably by the English homœopaths and our own Dr. William B. Griggs, who has used it in sarcoidosis and lung conditions with signal success. Further proving of it is on the docket, internationally, for the coming year.

Cesium is homœopathically completely unknown. It behoves us to start proving it at once. Samples of Cesium 30C and 200C are here ready to begin work, as the gift of Mr. Roger Ehrhart of Ehrhart and Karl.

Cesium is but little featured. The latest edition of the *Encyclopedia Britannica* mentions it only under Elements (p. 348) and under The Periodic Law (p. 519): atomic number 55, atomic weight 132.91, melting point 28.4, boiling point 670. The very long period of 32 elements from *Cesium*⁵⁵ to *Radon*⁸⁶ is condensed into 18 columns by the omission of the 14 lanthanons permitting the remaining 18 elements, which are closely similar in their properties to corresponding elements of the first and second long periods, to be placed directly below these elements. (32 elements 4f, 5d, 6s, 6p.)

The *Encyclopedia Americana*, 1943 Edition, Vol. 5, page 142, tells us that *Cesium*, an alkali metallic element was discovered in 1860 by Bunsen and Kirchhoff in the form of the chloride in a mineral spring in Bavaria. It was the *first* element discovered by the agency of the spectro-scope. It is widely disseminated, but seldom found in large quantity, never in the metallic state, usually as the chloride or oxide, commonly associated with the rare element *Rubidium*. It is found in the ashes of many *seaweeds*, in *tea* and *tobacco* and in several mineral springs. It also concentrates in *coconut shells*. Its most important source is the mineral pollucite (or pollux) found on the island of Elba and in the vicinity of Hebron, Maine, and which contains as much as 36% *Cesium Oxide*, with no *Rubidium*.

Cesium forms stable salts and strongly resembles *Potassium* in its chemical properties. Pure *Cesium* must be preserved under kerosene (reminding us of *Sodium* in oil).

It is a silvery-white metal, soft and ductile, oxidizing rapidly in the air. Its specific gravity is 1.88. Its oxalate and nitrate are used to a limited extent in medicine. Its spectrum shows two blue lines (*Cesium* means bluish-gray). It stands first in rank among the *electro-positive* elements. Its valence is 1. Its crystalline form is body-centered cubic. Volatile *Cesium* salts (chloride) color the Bunsen flame *violet*.

It is used in photo-electric cells, photometry, TV and sound films as a radio-wave getter and in cancer teletherapy (like Cobalt⁶⁰; its half-life being much longer, its intensity of radiation not as much). *Cesium* inhibits the synthesis of acetylcholine in the C.N.S. It has a stable isotope, *Cesium*¹³³ (100% abundance) and 18 radioactive isotopes. In decay it emits negatrons (negative *beta* particles) and positrons (positive *beta* particles) but no *alpha* particles. Its hazard lies in its long half-life, which in the case of *Cesium*¹³⁷ is 33 years (Cobalt⁶⁰ has only 5.3 years half-life). *Cesium*¹³⁷ is the greatest emitter of gamma rays. *Cesium* is related to Na and K, and like K, *Cesium* concentrates in the muscles and erythrocytes, also in soft tissues. To add to its danger, 100% of ingested *Cesium* is absorbed. It can be made by the nuclear fission of *Uranium*. It is secreted slowly through the urine, 50% excretion in 10 days. Up to 1948, there was little mention of *Cesium*. Recently its toxicology has appeared in Russian literature. *Cesium* excretion in rats is depressed by parathyroid extract and can be increased by high cortisone dosage. *Cesium*¹³⁴ excretion is increased when dietary K is increased. Absence of dietary K decreases urinary and fecal excretion of K,⁴² Rb⁸⁶ and *Cesium*.¹³⁴ The half-life of *Cesium*¹³⁴ is 2 to 3 years. It is in the *moderately hazardous* group. In the realm of engineering, *Cesium* absorbs neutrons and decreases effectiveness of reactions, making fuel-life shorter.

In the agricultural realm, the Russians report on the behaviour of trace amounts of *Cesium* and *Strontium* in soils and plants. They value, not only the study of natural cycles of absorption and desorption, but experimenting with *microdilutions*. (The dose of radioactive isotopes in the nutrient mixture of plant culture was 50 uc/l.) They find that much more *Cesium* is taken up from aqueous solution than from soil. Also that *Cesium* is absorbed from water more than *Strontium* is: 15 times as much in grain;

4 times as much in straw. However, the *Cesium* uptake from soil by plants is lower than that of *Strontium*. *Cesium* is fixed more strongly in soils. *Cesium* desorption is greatest in red soils, least in black soil. *Strontium* is wholly forced out of red soil by Ca and Na.

In the matter of translocation (i.e. distribution of absorbed or applied *Cesium*), *Cesium* shifts from leaves to grain 100 times more than *Strontium* in sunflower and kidney bean plants. It passes best when applied to leaves (foliar application) and accumulates in the plant reproductive organs, i.e. grain of wheat. Both *Cesium* and *Strontium* concentrate in the above-ground parts. *Cesium* is more mobile.

The mineralogical composition of soil influences the absorption of tracer amounts of *Strontium* and *Cesium*. Acid attracts *Strontium*: the liming of acid soil reduces the uptake of tracer amounts of *Strontium* by plants. *Strontium's* uptake in plants is inversely proportional to the amount of exchangeable calcium. The uptake of *Cesium* in plants is inversely proportional to the potassium content accessible to plants in soil. Nitrogen increases the absorption of both *Strontium* and *Cesium*, especially *Cesium*, and potassium reduces the absorption of *Cesium*.

These experiments have been conducted mainly with wheat, barley, oats, tomatoes, sunflowers, kidney beans and peas. Peas pick up *Strontium* hugely (825 parts of *Strontium* to 6.4 of *Cesium*).

As a defense measure against *Strontium*, why not plant fields in the fall-out areas to peas and burn the crop? Barley absorbs only 2% of radioactive *Strontium* contained in soil. The head (what the Russians call the "grain") of wheat (reproductive organs) absorbs the most *Cesium*.

These experiments, agricultural though they be, are related to man through his alimentation, hence germane to Homœopathy. Certainly they are food for thought, a stimulus to the creative imagination without which the splendid rigôr of scientific technique is sterile.

*Strontium*⁹⁰ is in the very hazardous group. It is known to kill bone marrow, hence tends to leukemia. Can any method prevent *Strontium* being taken up in blood and bone? How can one induce

the body to reject *Strontium*? What happens to human beings if too much *Strontium* is fed to them? What does our body do with the isotopes? These questions are being asked by physicists today. Oppenheimer says that every atomic event is individual. Has Homœopathy, whose essence is individualization, any answer? What remedies are sufficiently similar to *Strontium* in their proving to affect a cure of *Strontium* poisoning? *Strontium* is often indistinguishable from *Calcium*. Would dynamized *Calcium* be the answer? *Baryta carbonica* has been suggested as an antidote for *Strontium*; so has *Phosphorus*. Would a low potency of *Strontium* antidote *Strontium*,⁹⁰ or might very high ones be better?

As P. E. Schiller says, "Man's thinking must learn to accompany what goes on in nature. Atomic processes are natural up in the stars. A new science is needed to enter new realms the right way."

For those who wish to think along these lines, to whom the homœopathic research on *Strontium* is unfamiliar, it may be in order to give a survey of *Strontium* symptomatology. Of 37 homœopathic materia medicas, 19 have no mention of *Strontium*.

The predominant characteristic of *Strontium carbonicum* (Sr_2OCO_2) is vehemence. He is impetuous, violent, passionate, beats everything that gets in his way. He is quarrelsome and this mood lasts a long time. Ill-humored, irascible, he has a bad conscience. He is apprehensive, anxious, fretful. He is taciturn and averse to talk. He is extremely forgetful. He is an emaciated patient most of whose complaints are right-sided. He is chilly, hyper-sensitive to draft, relieved in the sun and by warmth, and by wrapping up the affected part; worse from uncovering. His pains wax and wane gradually. He is worse in the evening, at night and from 2:00 to 3:00 A.M. Worse by walking, motion, rising after lying, lying with the head low and by touch, rubbing and scratching. The symptoms tend to be one-sided.

Strontium is a great remedy for surgical shock after severe operation, and for the chronic effect of oozing blood loss. It has debility, languor; "phantom" pains, changing and difficult to locate, which are felt least in the open air, worse on uncovering the part. His dreams are mortifying, of fire, of grief or maybe vividly joyous. He has involuntary starting on falling asleep, is

restless and wakes smothering. He is weak in the morning. When half asleep, he awakes trembling in the evening with heavy chest and apprehension. The face is flushed, especially on walking. He is an arterio-sclerotic; apoplexy threatens. His mouth and nose give off heat. He is full of twitching and jerking, pulsation of the arteries and fullness of the veins. It is a great remedy for the climacteric. He falls asleep late, wakes after a short sleep. There is jerking of the upper body from violent dreams, often of fire. It is a great headache remedy, from the nape up over the head, better wrapping the head warmly like *Silicea* and *Magnesium muriaticum*. Worse with the head low. Violent sticking pain in the left frontal region. Supra-orbital neuralgia. Worse from cold and in the evening. Tension from vertex to jaw, as if the head expanded. Tight, chilly scalp. Headache better in the sun. Vertigo at noon. Tearing or violent boring in the right antrum; numb mount on waking.

The *Strontium* patient is worse from water and washing. He has more pain than *Calcium* or *Barium*; pain alternating with itching, sore pain with numbness. Pain with œdema (left sciatica with swelling of the left ankle). Hot flushes with aversion to uncovering.

Curious eye symptoms; sees green spots, sees blue and red edges; jerking of the left upper lid. Twitch of the upper lip and left zygoma.

Cracked lips, twitching of one side of the nose, bloody crusts, tearing in the roots of the teeth preceded by salvation. Spasmodic pain in the head through the eyeballs. Corroded tip of the tongue. Severe pain in the stomach during digestion; violent hiccoughs; violent thirst for beer, craves rye or brown bread; cutting colic, with diarrhoea and chill; watery, yellow stool with pinching pain, tenesmus and burning anus during and after stool. Nausea with burning hot face. Stitches in the groin; large, lumpy knotty stool. Periodic exhausting night diarrhoeas. Stomach pressure better eating, worse walking; constricted or burrowing pain with watery eructation. Faints with hard stool. Must lie down after stool. Urine smells of iodine or ammonia.

Menses early, like meat washings, later clotted; delayed puberty; short menses; constant slight show of menses. Enuresis.

Oppression of the chest; drawing pectoral pain; sternum pains to touch; stitches on inspiration. Burning in the sternum extending upward, like lightning. Coronary sclerosis: sticking pain in the heart during climax so cannot stay still. Angina worse walking. Distress around the heat as if pressed upon, with uncomfortable fullness and swelling of the abdomen. Lowers blood pressure and decalcifies Aneurism. Stenosis of the oesophagus.

Bruised pain in the back, worse touch and stooping. Bone pain especially in femur, deep in marrow, burning, boring, gnawing. Tearing of the limbs in bed. Exostoses, osteo-porosis, caries in children diarrhoea. Chronic sprains of the ankle with edema, icy feet with cramps of calf and sole. Complains of tendons and ligaments. Bone tumors. Profuse night sweats with pain in the limbs as soon as uncovered. Sweat of the affected part. Fistulous tumors. Trembling in the evening; trembling hands on getting wet. Weary legs worse at rest. Burning pain in the right shoulder; right arm as if paralyzed yet warm. Numb right thumb. Cold spots on the calves. Joints worse hanging the limb down. Numb right heel. Hot hands and cold feet.

Strontium tends to loosen adherent skin on scars, and rids the body of urates. It helps avert post-operative pneumonia and has an analgesic action. It alters bones in growing animals, like sclerosis from chronic phosphorus poisoning.

This searching remedy forms .02% of the earth's crust, regardless of man's atomic activities. More and more patients this year are showing *Strontium* symptoms and as Homœopaths we must be aware of this and counteract them constructively.

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