

measurement. The term "thermocouple" may, unmolested, preserve its original application to a single couple only. The term "multiple thermel" seems rather better than "thermopile" since it classes its object with other thermels or thermoelectric thermometers, whereas "thermopile" is more commonly associated with current generators, or with the special thermometry of radiation measurement.

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SOLAR ENERGY

"Creative Chemistry," by Edwin E. Slosson, M.S., Ph.D. (The Century Company), is a most interesting account of the astonishing number of important practical uses, in industry and war, of applied chemical science. For the benefit, apparently, of readers who are not educated chemists, or physicists, it makes occasional statements of pure science. One of these has the effect to revive the inquiry whether such statements ought not to refer to the observations or experiments on which they are based, unless readily available elsewhere. It reads: "*Solidified Sunshine*. All life and all that life accomplishes depend upon the supply of solar energy stored in the food." This is, in substance, but a repetition from prior publicists, many of them distinguished.

For example, Dr. Schuchert says: "Plants convert the kinetic energy of sunlight into the potential chemical energy of foodstuffs. Animals convert the potential chemical energy of foodstuffs into the kinetic energy of locomotion." And Dr. Soddy says: "Energy may sleep indefinitely . . . In the potential form in coal, it has persisted for untold ages. Once released, heat is the sole ultimate product."

A quite extensive search has failed to find, in any literature, the account of an observation or experiment as leading to such conclusion. An elementary item of chemical teaching is that the sun's rays convert (approximately) 44 weight units of the comparatively inactive gas, carbon dioxide, into 32 like units of the universally active gas, oxygen, and 12 like units of carbon, ultimately a solid possessing no

readily perceptible activity and incapable even of combination without the application of external heat. It is not easy for a non-specialist to believe, without evidence, that the energy of the sun's rays which decomposed the 44 units of the dioxide, adhered to the 12 units of carbon, and perhaps fell asleep there, while no noticeable amount went into the activity of the 32 units of oxygen.

FRANCIS B. DANIELS

SCIENTIFIC WORK IN RUSSIA

SCIENTIFIC men may be interested in the following letter that I have received from Dr. Th. Fjeldstrup, of the Russian Museum at Petrograd:

The effect the arrival of this letter will have produced on you is probably that of something dropping into your hands out of space.

It is of no use speculating on the possible ideas you had as regards my fate, no more than on the picture you Americans have imagined to yourselves of the state of Russia's home life to-day, since they are based on scraps of news, often defective, given in papers or obtained otherwise—our two worlds have been separated too long and too completely in their intellectual life to know much of each other.

Often and often did I feel tempted to recommence correspondence with you, but the prospect of being read a year or so after having written, if at all, cut short all attempts of the kind. I have better hopes now and therefore I permit myself to remind you of my existence and send you my best greetings.

After an absence of almost full four years (since end of February, 1918) I returned to Petrograd two months ago. Throughout this long period I have had various occupations, not always agreeable to my inclinations, but this was unavoidable, nor could one expect to be allowed to choose. The scene lies beyond the Ural Mts.

I do not intend to waste your time by giving a detailed description of my doings in the run of these years. I shall only dwell for a moment on some facts that might interest you.

The summer of 1920 I spent as a member of a scientific research party sent out by the University of Tomsk in the region that you paid a short visit to before joining me in Verchni-Udinsk, viz., the Minusinsk region. The city of Minusinsk and its museum I visited twice. The curator of the museum is a new man since you saw it, but the