

G. Galli
Summary
Pirovano, A.

"L'induzione magneto-elettrica in biologia"

International cong of electro-radio-biology,
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(Dr Ital
Eng. Summary)

Sanguine

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The magneto-electric induction, conveniently brought with proper magnetic conductors to act on vegetal organs, has generally a hastening action on the tropism of vegetative tips, with a maximum at frequencies between 80 and 300 periods p. s.

The Compositae are an exception to this rule, within the limits of experiment, being always late in the reacquisition of the ortho-tropic condition, no matter what the frequency be.

In various experiments where the magneto-electric induction has acted on ovaries, the embryogenesis has been disturbed and often hindered, particularly where it has been possible increase to artificially, although to a very small degree, the chemical tonus of the germinal plasma and of the paragamic organs.

In seeds obtained under similar conditions of abnormal electromagnetic rate, discordant with the biotic environmental electro-magnetic forces, the vegetative potentiality is weakened and, with stronger treatments, the morphogenesis of the embryo is modified, with frequent hereditary repercussions. The mutations so obtained are very distinct, of the same type. Their appearance, in a 640 periods p. s. treatment, reaches the proportion of 38 %, never before obtained.

Strong treatment with magneto-electric induction on pollen has provoked various modifications in the offspring. Some of these modifications appear directly in F^1 , others in F^2 have hereditary repercussions and in this case remain fixed.

Generally the magneto-electric treatments induce in F^1 a shortening of the ontogenetic cycle and therefore give rise to preflowering, prefruiting and precocity of ripening of the fruits that are set.

In crossing species normally impossible to hybridize, hybrids have been obtained between them—often fertile—by treating the pollen at low frequencies. The best results have been obtained with interspecific hybrids of *Cucurbita* and of *Prunus × Amygdalis* with treatments in an alternating magnetic field at 42 periods p. s.

KOPACZEWSKI. — L'intervention de Mr. Pirovano est empreinté d'un véritable bon sens latin. Il est évident que le biologiste reste stupéfait quand il constate que certains auteurs étudient l'action de divers facteurs physiques sur la cellule vivante dans les conditions qui précisément suppriment la vie; la vie d'une cellule n'est pas compatible qu'avec des oscillations minimes. Mr. Pirovano reproche aux physiciens et aux physico-chimistes de considérer les phénomènes vitaux statiquement, tandis que la vie est un phénomène dynamique.

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