

not true that Hübner used "binomials" during the period mentioned by Mr. Forbes, and it can only be by sophistry, which flies in the face of Hübner's own usage and explicit and oft-repeated statements, that it can be made to even seem that he used "binomials" in the period indicated. He came to use binomials at a later date, and finally toward the end of his life adopted the "binomial system of nomenclature," as we know it to-day. The legends of the plates in Vol. I of the *Sammlung exotischer Schmetterlinge* are not binomial, they are *absolutely* trinomial. I squarely take issue with Mr. Forbes on this point.

My motive for writing the foregoing lines is to simply let any reader of SCIENCE, who may have read my article of July 1 and Mr. Forbes's reply, understand that I am in thorough disagreement with him. I do not wish silence on my part in these columns to be construed as assent.

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VISIBLE RADIATION FROM EXCITED NERVE FIBER AGAIN

THE phenomenon of the "Reddish Blue Arcs and the Reddish Blue Glow of the Retina" is a very remarkable one—especially when it is exhibited (as I exhibit it) in a dark room before a whole audience at once. All are agreed that one is seeing entoptically certain optic nerve fibers on the surface of the retina—but why are they visible? I have given reasons for believing that they are emitting physical light—and this has required no "violent efforts of the imagination," as Dr. Davis¹ supposes that it has done—one has only to remember that nerve, when excited, gives out heat, and that heat is, objectively, the same thing as light. It happens that a physicist has just stated this explicitly: "The experimental evidence for thinking that light is a form of energy and that radiant heat is of exactly the same nature as light is overwhelming."² (Italics mine.) But may the cause be (Gertz) a secondary stimulation of some organ-fibers, ganglia, bipolar cells, or rods and cones—by means of action currents? There is a residual image, so nothing but rods or cones can be concerned—they alone contain the highly specific light-sensitive substance which furnishes a residual image. An electric current sent in from the outside gives visual sensations but with no residual image; "this does not prove, however," says Dr. Davis, "that an electrical disturbance *localized in the retina* (italics his) might not stimulate the photosensory mechanism directly." Now a current from the outside might conceivably have attacked the optic nerve

only after it has left the eyeball, but that it actually runs along the fibers on the surface of the retina is proved by the fact that structural details of the retina are marked out by it—for instance, at certain intensities the blind spot will be seen to be of a different color from the rest of the field. Since this is the case, it is inconceivable that an action current generated *within* the nerve fiber should play any different rôle from one that comes into it from a battery on the outside. It follows that nothing but physical light attacks the photosensory mechanism.

My theory has now been beautifully confirmed by Deane B. Judd, of the Bureau of Standards (*American Journal of Psychology*, October, 1927).

CHRISTINE LADD-FRANKLIN

QUOTATIONS

GENESIS AND EVOLUTION

THERE will be no more monkeying in the public schools with the Mosaic account of creation as recorded in the book of Genesis, if Representative Hobbs's bill to prohibit it finds favor with his fellow members of the General Assembly and is approved by the Governor. Mr. Hobbs, who is the accredited representative of the sovereign legislative district composed of Wolf and Powell Counties, has introduced a bill to prohibit the teaching in the public schools of the state any theory of evolution that conflicts with his understanding of the sacred texts of Holy Writ.

Statesman Hobbs has eight children, whose simple faith in the Hebraic account of creation he would protect with the strong arm of the law. Many earnest, honest sticklers for the letter of the law will approve and applaud this zealous guarding by the Wolf-Powell statesman of the faith once delivered to the saints. Why should the great Commonwealth of Kentucky trail behind progressive states like Tennessee and Texas in this matter of protecting its youth against this threatening heresy? Was not the Grecian Socrates put to death for corrupting the faith of the youth in his time, respecting the virtues of the gods? Was not Galileo severely punished by the Hobbs law of his age for contradicting the Biblical teaching about the solar system?

Representative Hobbs serves well his state in seeking to call a halt on these venturesome modern school teachers. They have already poisoned the minds of a mighty multitude with the false doctrines that the earth is round, that the planets revolve around the sun, that this earth instead of being the sum and center of the universe is but a sand grain on the limitless shores of creation and, instead of being only six thousand years old, has been revolving through space for

¹ SCIENCE, 1928, LXVII, 69.

² Crew, Henry, 1927, "General Physics," 319-320.