[1]: The Tiger's Eye:

E. Fisher

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**** Prologue ****
The Tigers Eye gleams with an irradiance too brilliant to measure. No poxy Diamond or Ruby could temper its brilliance for it is a singular specimen, a uniqueness within the halls of any museum. Chemists treat it with disdain for it is a low-grade example of simple silicon dioxide, elementary silica, unpure. But that will never diminish its beauty, its majesty, its material worth to all those with an artistic flare within their souls. Neither will it curtail the interests of physical or optical scientists, who are captured, even raptured by its properties.
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Proc. 12th Annual Natural Material Optical Physics Committee,
The Royal Society, London. [18th November 1955].
Professor Erwin D. Chadwick FRS (University of Manchester)

The Tigers Eye, here at the Natural History Museum, London, is the pinnacle of natures artistry. The worlds within worlds, the striations and interconnected swirls of the stone are beyond human comprehension. Yes, we here around the table of this session of the Royal Society, would agree that the colours and stripes are a product of both quartz crystals and pressure modified filaments of amphibole, somehow metamorphosed into Limonite, a simple hydrated iron oxide. But we can all agree, physicists and chemists alike, that its optical properties are beyond recount.

Unlike standard examples of Tigers Eye from our own London collections and from colleagues in the United States, this specimen is combined at the microscopic level with Hawks Eye, the related blue mineral. Under close microscope observation, the specimen seems to capture light entering the blue regions and traps it within the interleaved layers of the brown mineral. When an electrical voltage is applied to a thin slide of this material, the current increases exponentially as light enters the crystal. Having tested the sample under many conditions we cannot explain, but we can report our findings.

Under pure blue light, produced by filtering a calcium oxide (lime) Gaslamp, the sample radiates light at the brown/red end of the visible spectrum, while simultaneously producing a significant current and producing clicks on a standard issue Geiger counter. This we would expect from a combination of Compton Scattering and photon induced absorption leading to generation of photoelectrons within the sample. However, as a distraction from traditional theory, any Compton Scattering producing the emission of photons of lower energy, and the presence of some form of hard radiation triggering the Geiger counter, would be expected to occur when the sample is irradiated with X-ray radiation. How then do we explain such observations in the visible?

The samples odd properties continue in the temporal domain, where a pulse of light, split into one arm through the sample, and one arm through a medium of constant and known refractive index, is observed to be delayed in time. The light seems trapped within the structure, almost like the heat remaining in a metal sample after it has stopped been heated. Researchers within London (Patrick Blackett Imperial College London) have observed so called pair production in semiconductors and metals, whereby the absorption of a high-energy photon produces both a photo-electron and a positron, the electrons antimatter counterpart. We would normally consider such a pair-production process in our deliberations on the reasoning for the Geiger counter detections rates. However blue light, nor indeed any wavelength produced by Calcium Oxide lamps, cannot produce such high-energy phenomena. From Einsteins theory of energy-mass relations, visible photons do not have the energy to produce electron-positron pairs without breaking the law of energy conservation.

This session of the Royal Society is unable to explain, nor agree upon suitable avenues of investigation for the observations of this samples behaviour. The sample, and notes of the late Dr H. I. Brown are to be stored in the museum within the private collections of the Royal Society. Assess for study is hereby given to any Royal Society member, able to shed new light on this theory defying sample.

**** Epilogue ****
Through miscommunication, this sample of Tigers Eye was mislabelled and poorly archived. It was put on display as the Natural History Museums example of Tigers Eye for public viewing. In 1978 a new sample, both larger and with less man-made examination scratches and defects took the place of this small but unusual specimen. It then passed through a convoluted chain of events into the hands of a small boy, seemingly the son of a late curator of the mineral and gemstone collections. While this child grew to be a world leading abstract colourist, working exclusively in oils, he both sited the gift of the stone as his muse and inspiration for his works, and requested the stone be cut to form a pair of ear rings for his wife. By 2002, and with the eventual breakdown of the marriage, the two fragments of this highly unusual Tigers Eye specimen now reside in a locked jewellery box in an attic of the wifes new husbands property. The notes of Dr H. I. Brown still exist, however with many archived documents, it is unlikely they will see the light of day for many decades to come.
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The End...